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BULLETIN OF THE MASSACHUSETTS ARCHAEOLOGICAL SOCIETY

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BRONSON MUSEUM

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This is the Society's Museum, 5th Floor of the 8 North Main Street Building, Attleboro, Mass. — Museum hours are from 9:30 to 4:30, Mondays, Tuesdays, and Thursdays. For special arrangements to visit on other days, contact the Director, Maurice Robbins, or the Curator, William S. Fowler at the Society Office, Bronson Museum, Attleboro, Mass.

The Museum includes exhibits of artifacts and seven dioramas portraying man's prehistoric occupation of New England. The displays are arranged so as to show man's development through four culture stages, from early post glacial times.

The most recent diorama extends 15 feet across the front of the museum. It depicts an Archaic village of seven large and unique wigwams as indicated by their foundations, excavated at Assawompsett Lake by the Cohannet Chapter. Human figures to scale make the scene come alive and help create what unquestionably is an outstanding addition to our ever growing museum displays.

COMPARATIVE STUDY OF HOE AND SPADE BLADES

WILLIAM S. FOWLER

In the past much has been written by the author about stone hoes and spades of New England. Numerous reports made years ago were published in the *Society Bulletin* presenting these tools in various ways. However, there is still much about them with significant implications that has not been covered, and it is the purpose of this paper to present several new aspects for discussion. To do this will of necessity require somewhat of a review of earlier writings, but from a new angle and with some new evidence, which will be illustrated. So far as the hoe and spade blades of the Northeast are concerned, this study seems important more because they were indispensable for the production of maize than for any aesthetic value their rudely worked forms may have as collector's items. For, in the case of most specimens, they appear to have been quickly made, often with what seems to have been casual workmanship.

For those Society members unacquainted with what has gone before, consideration of this agricultural discussion should be for them uninhibited. And even those who have read all that has been written on the subject in the past should find this new study, as it unfolds, worthwhile. For what is now proposed is a comparison between hoes and spades of the Northeast and comparable tools of the Midwest. Not that this implies an attempt to equate one regional group with the other, but rather to try to discover the forces that tended to make one different from the other. For varying traditional impulses derived from the activities and customs of peoples differ from one section of the country to another, influenced somewhat by changing environmental conditions. As to the part man has played in agricultural developments in various regions, soil, of course, is one determinant, while another might be climate. But by far the greatest factor should be the economic background of the people involved. For example, in New England presence of steatite outcrops together with a creative people brought about an industrial age of stone bowl-making that immediately preceded the advent of maize in this northeastern area. In the Midwest, however, this industry was non-existent. Instead, other economic activities occurred there to produce a different tradition. Also, it seems of passing interest to observe that in the diffusion of maize across the continent from the Southwest, or up the Mississippi, whichever way it spread, the Midwest would have received it long before it reached the Northeast. Therefore, it appears probable that midwestern peoples would have had a longer time in which to develop planting techniques than those living further east.

THE DISCOVERY

Whatever may be said concerning hoe blades of the

Northeast depends to some extent upon knowledge derived from a certain discovery made by the writer 30 years ago in Easthampton, Massachusetts. On a plowed site in this town he picked up an unusual artifact made of basalt — a common stone in this area — that seemed to have interesting characteristics. With a triangular-shaped blade thinned to a pointed bit, and with a thick oblique base it differed from other well-known artifacts of that day. But what was most noticeable about it was a well-worked wide groove running from front to back over the top of its base, a marked departure from the usual side-notches of other artifacts. At once this single broad-notched groove seemed to suggest a new tool that demanded an interpretation. A week of study passed by before the true nature of this Easthampton blade was perceived to be that of a hoe — descriptively named a Triangular hoe (Fig. 1, #4).

Then followed a long period of 20 years or more before others were willing to accept this find as a new agricultural tool to replace certain flat-faced blades, formerly known as hoes, but now presumed to be Stem spades. During this time more Triangular hoes were recognized and recovered, usually found with one or both basal corners lopped off to produce proper balance. Formerly apparently overlooked, their number now rapidly increased with all sizes represented. However, it soon became evident that until a way could be found to attach them securely to a handle, they could not be said to be, in fact, hoe blades. A year went by in which different methods of hafting were tried with varying degrees of success, in which no single way was found that would accommodate all variations of the blade. Not until the ultimate was discovered by trial and error could all sizes and shapes be effectively lashed securely to the handle. This successful haft consists of crisscrossing the thongs in front as well as in back of the hoe blade, when lashing it to the end of a straight stick that rests on its oblique base (Fig. 1, #1). This illustration is of an early recovery from a plowed plot at the foot of Mount Nonotuck, elevated somewhat above camp sites along the Oxbow of the Connecticut River. Interestingly, it is rudely made of coarse granite, evidently knocked off loose glacial boulders of the identical stone lying nearby. Apparently, it was made on the spot, presumably by a woman planter, as will become apparent further along in the discussion. She may have had a small garden at this place, which doubtless would have been located just above her camp site home on the river below. Beside other evidence, a small weeding hoe made from a split granite pebble was found at the same spot close by, which seems to support this conjecture (Fig. 1, #2).

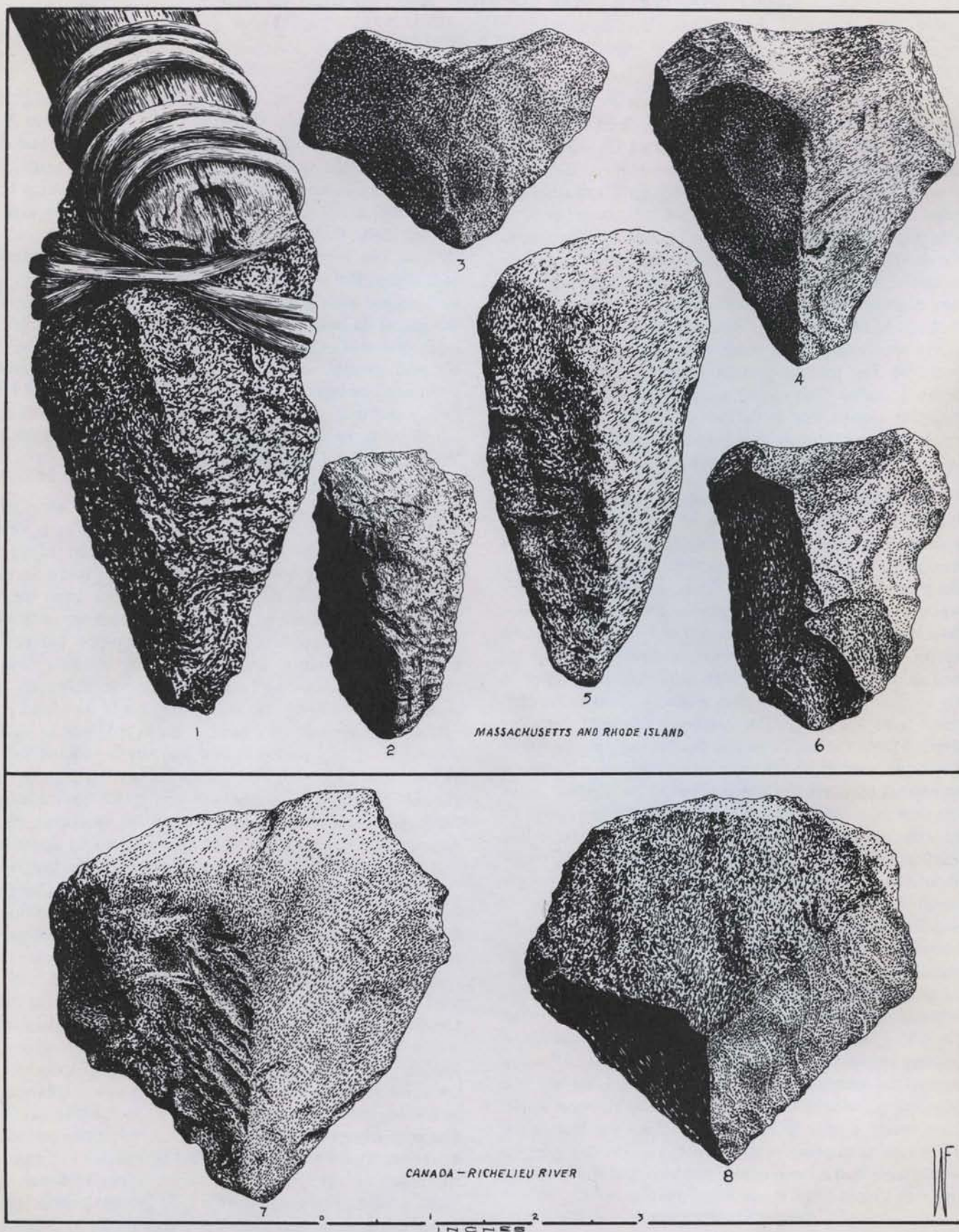


Fig. 1. TRIANGULAR HOES, Northeast. 1-3, Oxbow, Conn. R., Mass. (1, suggested haft); 4, Type Specimen, Easthampton, Mass.; 5, Rhode Island; 6, Plymouth, Mass.; 7, 8, Richelieu R., Saint Hilaire, Canada.

Over the years that have elapsed further indisputable facts have emerged to expand and strengthen the position of the Triangular hoe in the archaeology of the Northeast as the most favored stone hoe of the area. Only one other kind of hoe blade has appeared, and this in but a few instances. Consisting of a blade with a crook in its stone stem, it may be lashed simply to the end of a straight stick, the crook tilting the blade away from the handle. However, this blade is scarce, probably because of the infrequent occurrence of stones with the required crook at one end. Therefore, it seems safe to assume that the Triangular hoe was the favored one, and is held by this paper to represent the preferred hoe of the Northeast.

In justification of this statement, the writer made an extended tour of a large segment of this region in search of hoe blades. During the 5 days spent on this project in about 1952, Triangular hoes, to the exclusion of any

other kind, were recovered in plowed fields from site after site throughout Connecticut, the Hudson Valley of eastern New York from above Kingston through Catskill, Cossackie, and on up the Mohawk to Scotia near Schenectady. Since then, recoveries of this hoe in small and large sizes, usually rudely shaped, have been made in many parts of Massachusetts and Rhode Island, some of which are illustrated (Fig. 1, #1-6). For the purpose of comparison, those from Cossackie and Scotia also are illustrated (Fig. 2); two of the Scotia recoveries are made from split pebbles worked into shape (Exhibits #2,4). The fact that the Scotia site on the easterly bank of the Mohawk produced 4 well-defined blades during about an hour's surface hunt seems proof enough that this type of hoe was well entrenched in Iroquois country. How much further up the Mohawk it may have been in use cannot be determined, as the writer's search ended there. It is hoped that Society members in this area may make further recoveries that will provide the answer.

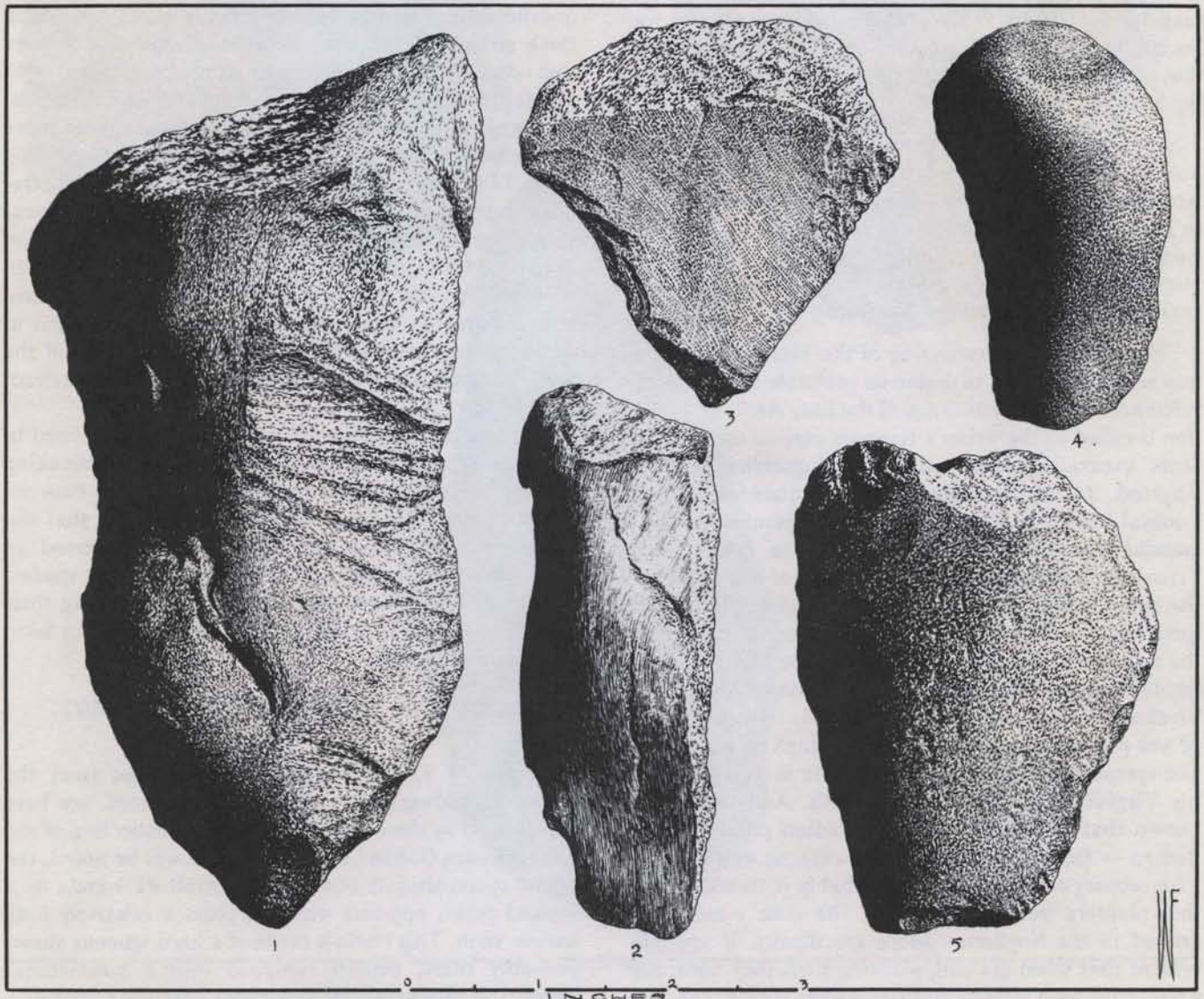


Fig. 2. TRIANGULAR HOES, Hudson and Mohawk Valleys, N.Y. 1, Cossackie; 2-5, Scotia (2-4, Weeding Hoes).

Realizing that the Hudson-Champlain-Richelieu water route was a thoroughfare for Indian travel in historic times, the writer decided to carry his search for Triangular hoes into Canada. His decision was influenced by the well-known drawing by Lafitau in 1724, in which this French explorer depicts a group of eight Huron women planting corn. In the engraving four of the women are wielding Triangular hoes, since proven to have been what Lafitau saw — see Society Bulletin, Vol.31, #1&2. Inspired by this drawing, an afternoon was spent searching Richelieu River sites near Mt. St. Hilaire; probably the mountain shown in the drawing. The result was recovery of 2 good specimens of the Triangular hoe (Fig. 1, #7,8). These finds seem to confirm Lafitau's drawing and indicate that this kind of hoe extended into Canada, probably diffused there from the Hudson Valley. Incidentally, not too long ago a Triangular hoe was recovered from a Virginia site and was shown to the writer. This suggests that this kind of hoe reached into southern coastal areas as well, to which it may have diffused. This presents an opportunity for Society members in Virginia to carry on the search in that region to try to prove the presence there of Triangular hoes.

With writer's research ended it now appears valid to hold to the belief that most, if not all of the agricultural Northeast, used the stone Triangular hoe quite generally in preference to other styles. Therefore, in the comparison that will be made between planting hoes of the Northeast and those of the Midwest, it will appear as the preferred stone hoe of the Northeast.

For a better understanding of the Triangular hoe, it now seems important to define its probable source. With reference to the preceding age of the Late Archaic, attention is called to the writer's research carried on for nine years excavating seven stone bowl quarries in New England. In western Massachusetts quarries, tailing removal tools were found in use that resemble the Triangular hoe, but are bulkier and have been called Triangular tailing-breakers. As a result of this evidence the belief is held that the probable descendants of the quarriers, the planters of the following age, influenced by the stone bowl industrial tradition, made planting hoes similar but generally smaller than the Triangular tailing-breakers of the quarry. Apparently, this triangular type of hoe proved so successful that it gained in popularity and spread far afield, even into Canada as well as possibly Virginia and points to the south. And since it is known that in historic times the Indian planters were women — from Lafitau's 1724 drawing, as well as from 17th century commentators — probably it should follow that planters were women from the time maize first arrived in the Northeast. More specifically, it appears evident that when devising planting tools they naturally would have been influenced to copy tools such as the Triangular tailing-breaker then in use in the quarry,

presumably made and used by their own sex — doubtless their mothers. This interpretation of the evidence seems logical and is basic to the comparative discussion that concludes this report.

ANOTHER PLANTING TOOL OF THE NORTHEAST

Here in the Northeast with the preferred hoe clearly defined, it is not difficult to identify certain other rudely-formed artifacts with flat-faced shapes as Stem spades. Invariably made of such stones as granite, sandstone, or schist, these blades have been collected for years as surface finds. They have occurred in small and large sizes, and, before discovery of the Triangular hoe, were considered by most to be hoe blades, the only stone planting tool then known to collectors. Classification of these artifacts as hoes was as a result of what appears to have been a hasty decision without much thought given to whether their shapes were suitable for hoeing, which now seems questionable. For they appear roughly made often with thick straight-edged bits, sometimes somewhat convex and occasionally tending toward a blunt point, and with a wide stem fashioned at the opposite end. In the light of present knowledge, these thick blades now appear more serviceable for pushing or shoving soil than for breaking it up. In support of their functional use as spades, frequently small sized specimens have appeared on excavated sites associated with refuse pits, as though they had been used for digging these holes. A representative small Stem spade (Exhibit #3), as well as larger ones have been illustrated (Fig. 3, #1,2). In general, they appear to be an improvement of the woman's Hand spade of the stone bowl quarries, from which they seem to be derived.

Here in the Northeast with the hoe so well defined in a triangular shape with pointed bit — ideal for breaking soil and in small sizes for removing weeds from between maize shoots — it seems irrelevant to assume that the aforementioned bulky flat-faced tools ever served as hoes; rather that they probably were used as spades. Their haft would have been simply that of lashing their stem to the end of a thick straight stick, similar in form to a modern spade.

PLANTING TOOLS OF THE MIDWEST

Arkansas Types. Flat-faced stone blades from the Arkansas midwestern region, known as hoes, are here represented by three specimens from the collection of the late Laurence Gahan (Fig. 4, #2-4). As will be noted, the broad spoon-shaped blade of (Exhibit #2) ends in a worked point, opposite which appears a relatively long narrow stem. This blade is made of a hard igneous stone, probably chert, expertly chipped into a symmetrical shape. It is conceivable that it could have been used as a hoe, provided a stick was obtained with a crook at one

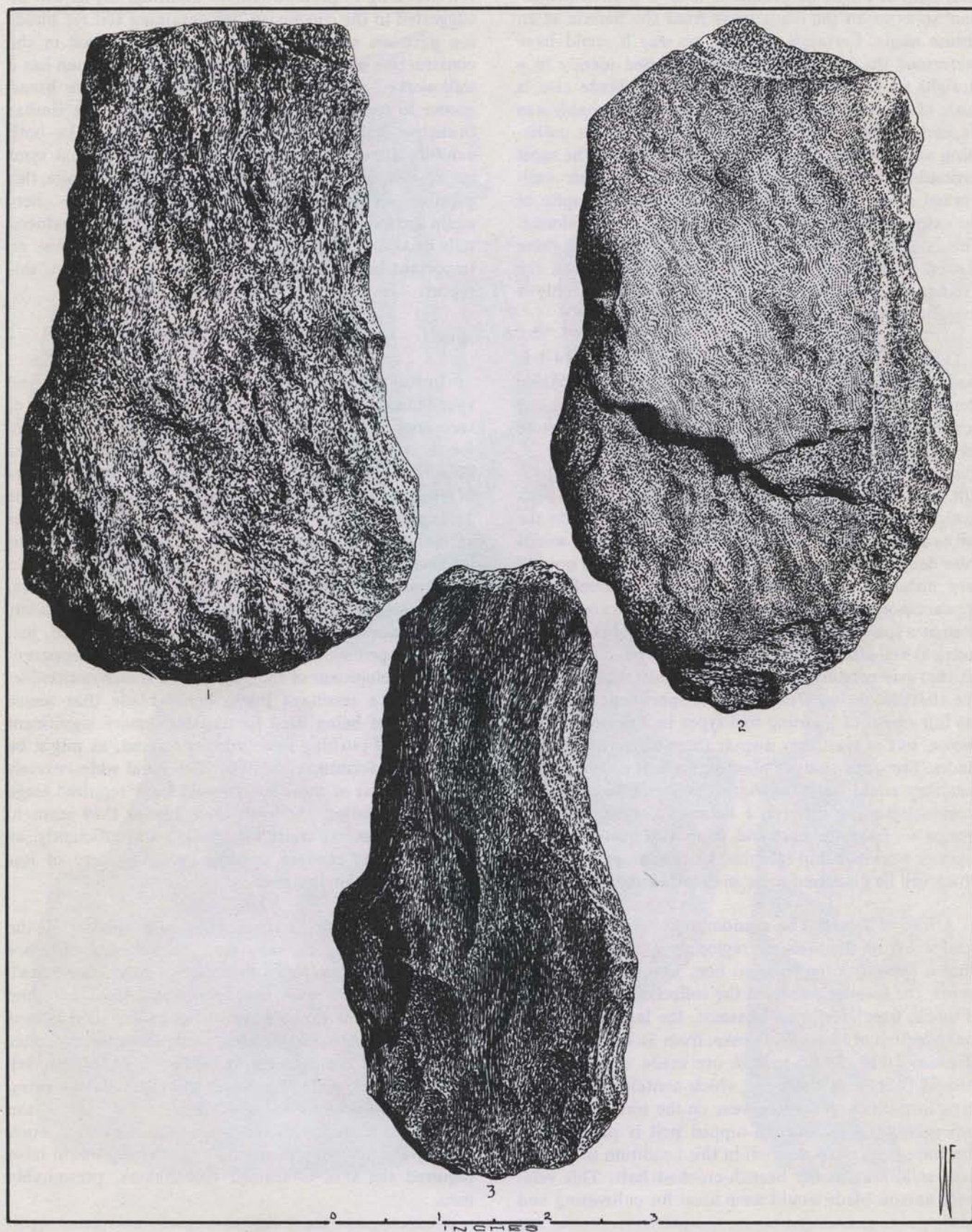


Fig. 3. STEM SPADES, Northeast. 1,2,Massachusetts; 3,Rhode Island.

end, such as might be produced from a branch projection, so as to tilt the blade away from the handle at an obtuse angle. Certainly, there is no way it could have performed the function of a hoe if lashed merely to a straight stick. The smaller spoon-shaped blade also is made of the same hard stone as the former, probably was similarly hafted and used as a hoe, perhaps for cultivating and weeding. Beside their utilitarian use the most noticeable thing about these two blades is their well-worked shapes with skillfully chipped edges in spite of the extremely hard stone from which they are fashioned. This suggests work by a practiced artisan. If these blades, in fact, are hoes, they differ greatly from the Triangular hoe of the Northeast, which needs only a straight stick for a handle, a much simpler haft.

The third specimen in this group (Exhibit #4) is made of sandstone, a relatively soft and somewhat friable stone. Its broad, thick bit is truncated and reveals evidence of deliberate honing of its edge to make it more serviceable. It has a broad stem requiring up to a 2" thick stick for a handle. Because of these traits it is difficult to see how it could have been used as a hoe — its straight thick bit would have retarded its thrust into the soil as a soil-breaker. Also, if so used its soft stone would show deep pebble nicks, it would seem, which is not the case although some wear is apparent. Therefore, it appears more reasonable to consider this Arkansas specimen as a spade blade. Again, most noticeable is its symmetrical well-shaped form with a hand-ground truncated bit that has produced a tool with unmistakable spade-like characteristics. Whether these specimens represent the full extent of planting tool types in Arkansas is not known, but at least they display three different styles of blades. From our study of planting tools, it is conceivable that they could have functioned as described. But the most outstanding difference between the two regional groups — from the east and from the west — is the superior workmanship exhibited by the Arkansas blades, which will be discussed more in detail in the conclusion.

Missouri Types. The predominant kind of agricultural tool from the Missouri region appears to have been what is known as the Notched hoe. Two styles are illustrated, the smaller one from the collection of Morris T. Mitchell, from Northeast Missouri, the larger one from the collection of Harry W. Franke, from St. Louis County, Missouri (Fig. 4, #1,5). Both are made of local ivory colored flint from the area, which contains occasional ferric impurities. A surface wear on the smaller blade is noticeable, and its straight-topped poll is not worked; may have been purposely left in this condition to effect a more solid seat in the branch-crooked haft. This relatively narrow blade would seem ideal for cultivating and weeding.

Not so the larger blade, which doubtless served for

soil-breaking in preparation for planting, or, as will be suggested in the conclusion, for obtaining soil for building purposes such as apparently were required in the construction of ceremonial mounds. This specimen has a well-worked concave base that forms a suitable broad groove to receive the hoe handle, probably in a similar branched haft as for the smaller specimen. In both exhibits attention is called to their well-executed symmetry and the controlled chipping that has made this possible. As in the case of the Arkansas blades, here again are tools with traits that could have been produced only by skilled tool-making artisans, a fact that has an important bearing upon the conclusion reached in this report.

CONCLUSION

In this report the large illustrated display of hoe and spade blades of the Northeast, selected from quantities of recovered specimens, seems impressive evidence. Here for the first time a selected assembly of specimens has been brought together representing more than 30 years of research. From these exhibits certain basic traits of the Triangular hoe of this area, although with numerous variations, may be easily identified, including a triangular shaped blade; thick oblique base, sometimes with a broad worked groove over its top; one or both basal corners lopped off to effect balance; and usually rudely flaked shapes, apparently only moderately worked, just enough to provide a serviceable tool. The same apparent casual development of the Stem spade is also noticeable, often with a resultant thick, heavy blade that seems incapable of being used for anything more significant than that of pushing loosened dirt around, as might be required in forming corn hills. The usual wide coarsely chipped stems of these tools would have required large unwieldy handles, and with thick blades they seem to lack the necessary traits for spading soil efficiently, as expected from modern spades; probably were of less importance than the hoe.

On the contrary, stone hoes and spades of the Midwest, as may be seen from the illustrations, are expertly flaked into forms that are not only symmetrical, but obviously are more exactly shaped. Also, the stone used for the hoes most always is a hard stone such as flint or chert, indigenous to the area, while sometimes a softer stone is used for spades. In either case, blades are completely chipped all around without reliance being placed upon an original spalled form for part of the shaping, as frequently is the case in the Northeast. Such well-developed stone knapping undoubtedly would have required the skill of trained tool-makers, presumably men.

The question that often arises is: what caused this disparity between the planting tools of the two regions



Fig. 4. PLANTING TOOLS, Midwest. 1,5,Notched Hoe (Missouri); 2,3,Stem Hoe (Arkansas); 4,Spade (Arkansas).

under study? For both groups ostensibly would have been used similarly in growing maize to supplement a game-supplied economy. For the purpose of discovering what factors helped produce the tools in each regional group, a study has been made of the economic forces that may have brought about the differences. Not that this has exposed any sensational break through, but rather that it demonstrates a need for a comprehensive interpretation of factual evidence, as related to the activities and customs of the people involved. And these are often revealed in archaeological excavations from remains that indicate man-directed activities instrumental in the formation of traditions.

Considering first the Northeast, it has already been shown how stone bowl-producing activity, including the making and use of certain tailing-removal tools in the quarries, preceded the coming of agriculture. Also, by logical reasoning the probability has been presented that the Triangular hoe of the planters was derived from the quarry Triangular tailing-breaker, while doubtless the Stem spade, similarly, evolved from the Hand spade of the quarry. Further that this tool evolution was confined to one sex — female — with women becoming the planters. Racial continuity is indicated, in which women planters, when devising their tools, were influenced by the stone bowl industrial tradition involving their mothers. But what is more, they appear to have been the makers of these tools, since these implements fail to display, for the most part, careful well-chipped forms, as might be expected if made by experienced artifact makers. In verification of this assumption, consider women's dedication in colonial days to planting, as indicated by certain Indian deeds. Here are statements to the effect that native women were desirous of retaining rights to cultivated plots for planting maize, as though agricultural pursuits had been theirs from the coming of maize. On the other hand, men were concerned only in preserving their hunting and fishing rights. This evidence goes far in supporting the contention that women probably would have made their own planting tools, for which they alone were responsible — men were seemingly otherwise engaged. In other words, men appear to have been too much occupied in the pursuit of game to bother with the production of maize, which never became a staple food in the Northeast, down to the time of the whites.

In the Midwest a totally different industrial activity developed, which impelled the actions of people in a unique but dissimilar way. It seems to have come about as a result of the vigorous Hopewell culture, which reached out and spread from Illinois through Ohio, Missouri, and Arkansas. The impelling drive back of this diffusion appears to have been a religious movement dominated by shaman priests. The chief ceremonial accomplishment of this culture was the building of huge

earth mounds, in which burials were made, surrounded by built-in elaborate tombs for the rulers, but only simple interments for commoners. The spiritual shaman leaders evidently exercised great authority over the people, who became their dutiful followers and servants, many of whom were kept at hard labor building the prescribed mounds.

As time passed a forceful Mississippi Period evolved, the center of which was at Cahokia in southern Illinois. Here the great Monk's Mound was built, requiring an untold number of man-hours of labor. With only elemental hand labor of those days the work must have been staggering. It was dependent upon two conditions: 1) a food supply so good that the workers could have a supply in reserve sufficient to feed them over an extended period of time; and 2) a powerful command that held them to the never-ending hard labor of soil-moving.

For the building of Monk's Mound, as well as all other mounds, durable food for the many workers had to be provided, which seems to have been maize for the most part, since its preservation posed no problem. Hence, its production became essential with Mississippi River bottom lands used for extensive plantings, beside suitable plots doubtless along the Missouri, Arkansas, and Ohio rivers. All of this activity produced a tradition in which it is likely that men as well as women participated. For, as has been previously suggested, the superior styling and workmanship of the Midwest Notched and Stem hoes, beside the less well-known spades, leads one to conclude that they were made by experienced male tool makers. Here then is evidence that appears to be applicable to the mound-building economy, in which men may have participated due to their probable making of the necessary tools. Quantities of Notched hoes have been recovered from the vicinity of Monk's Mound, which suggests that they may have been the principal tools used to loosen soil for basket conveyance in the building of such mounds. Furthermore, since this kind of hoe has been found scattered throughout midwestern areas, it seems safe to assume that it also served agricultural needs as the preferred tool in the planting and cultivation of maize. In fact, one might hazard a guess, because of the presumed tool-making involvement of men, that they worked with the women, not only in building the mounds, but in the attendant food-producing agricultural pursuits as well. For, from reliable reports it is stated that in the Midwest, unlike the Northeast, maize became a staple food, while game was not by then a permanent food source, although important.

In this comparative study of planting tools from two far apart regions, the differences in styling between implements of the Northeast and those of the Midwest appear to be the result of two dissimilar traditions; the

stone bowl industry of the former with its evolving tool-making women planters, and the ceremonial mound-building of the latter involving male tool makers, who produced planting tools superior in appearance to those of the Northeast. Not that these two separate ways of life alone made the difference, for environment and available stone materials also may have been important factors in bringing about the final results. Whatever actually happened, the significance of this study, as it would

seem, is the need in archaeological research of fitting artifacts under discussion into their respective traditional grooves. Only in this way may a more complete picture be had of the relationship that existed between man's economic activities and his making of tools for survival.

Bronson Museum
May 26, 1971



THE BROOK MEADOW SITE

RICHARD PARKER

The Brook Meadow site, M.A.S. #M35-12NW, is located at about the 100' contour on the southeast side of the upper Neponset River. It lies between the river and Walpole Street in the township of Canton, Massachusetts. The site is now part of the Brook Meadow Estates, and is bordered on the west by the Brook Meadow Golf Course. In excavating the site, the writer was assisted by Alan Lowry and Ross McCurdy.

The area explored in this report covers four sections extending about a half mile along one side of Walpole Street atop several rolling, undulating hills, consisting of glacial-deposited gravels and sand. The area is in the process of being developed by a builder of homes, with much removal of gravel for fill by bulldozer operations. As a result, our excavational work was frequently interrupted, necessitating digging at random rather than square by square by the grid system. For the most part, unsorted gravels existed interspersed with large cobbles, while an occasional accumulation in kettle holes of clear sand occurred in a few places. This gravelly condition reached up to the loam, of which there was only a comparatively thin covering of about 2" that increased to 4 or 6" in a few places. This irregular condition suggests inroads caused by some kind of disturbance in former years, such as various natural erosions. Existing vegetation over the area is mostly mixed hardwood growth. Oak and maple predominate, while mixed in are some ash, hickory, birch, and a few spruce, cedar, hemlock and pine, with low-bush blueberry and laurel underfoot.

Of the four sections that were excavated, three only will be discussed: A, C, and D. Section B was explored in

the early stages of the dig in 1968, located about a third of a mile west of section A. Construction work of the building operator here prevented consistent excavating, and after a number of artifacts had been recovered our operations for the remainder of the dig were concentrated in sections A, C, and D. These areas are located along both sides of what appears to have been an old stream bed that has left a gully between the sections. Evidently the old stream emptied into the Neponset Marsh toward the northeast, thence into the Neponset River. Gravel removal operations had cut into elevated areas, but had left sufficient land for our excavation extending to the north ridge of section D, where the land drops off abruptly to the swampy marsh below.

The site area has natural resources conducive to camp life of primitive days, including the Neponset River and adjacent marsh for fish, water fowl and edible plants, beside canoe travel on the river itself. And for tool making there were abundant cobbles to be had of felsite, quartzite, quartz, and basalt.

SOIL STRATIGRAPHY

Four well-defined layers of soil were present, although gravel and cobbles were extensive throughout these layers for the most part. At the top was a sparse 2 to 6" deposit of loam, light red-brown in color, typical of soils formed under an oak and hardwood cover. In a small area in section C, however, a darker brown topsoil occurred 5 to 6" deep, characteristic of soil formed as a result of pine growth. Contrary to other areas

this spot had subsoil consisting of pure sand free of gravel. Just below the loam at Junction — the dividing line between loam and subsoil — occurred the second layer. This varied in thickness from 7 to 9", and consisted of a somewhat lighter brown color than that of the topsoil in areas where signs of primitive occupation existed. In other areas this subsoil was very yellow, apparently due to lack of organic midden residue. Underlying this layer occurred a 4 to 6" deposit of sterile light yellow soil, below which appeared a mixed accumulation of white sand and gravel, also sterile of occupational deposits. Recovery of artifacts occurred mostly in subsoil second layer, which also contained much refuse, fire-cracked stones, flakes, calcined bone, charcoal, and stone hearths. Only two or three artifacts appeared in the loam.

METHODS OF EXCAVATION

Except for two small areas in section D, excavated by the grid system, the site was dug at random, following the uncovering by the bulldozer of spots that revealed habitational evidence. Here, work progressed by the screening of layers, and the recording of artifacts from screen to last screened depth. However, many artifacts were found *in situ* this way and were recorded as to depths. Short handled hoes were used in excavating all features, such as stone hearths and refuse pits. Exception to random digging were several squares excavated by the grid system in section D, as previously mentioned, as well as seven squares dug this way in section A. It is now planned to finish the remainder of section D on the bluff above the marsh, which is laid out in squares. This area is not slated to be disturbed by building operations. Here, 12 squares have already been dug with favorable results. A later report will cover further excavations in detail to be carried on at this location.

As formerly mentioned, recovery of artifacts, almost without exception, occurred in the second subsoil layer underlying the loam. They consist for the most part of items known to be diagnostic of the Late Archaic period. A few probable projectile points of the Early Archaic, Corner-removed#5 and 8 appeared, but at similar levels to artifacts of the Late Archaic. Evidently, disturbances such as water-erosion or aboriginal pit digging have mixed remains of the two Archaic cultures, thereby destroying the value of archaeological stratigraphy. Representative specimens of site recoveries have been illustrated to demonstrate the preponderance of Late Archaic artifacts (Fig. 5). Certain recoveries made in and around stone hearths and refuse pits are of interest and will be referred to with descriptions of these features. All told, 101 projectile points, fractured and perfect, and 106 other artifacts were recovered from all sections.

Hearths consisted of indiscriminate assemblages of

firestones, most with evidence of having been subjected to active hearth fires. One of these with a small number of stones and excessive depth of deposit may have been some sort of a pit and hearth combination. Only those refuse pits containing artifacts will be listed, although there were many more. All such pits were basin shaped, round or oval, and contained a dark greasy brown fill mixed with charcoal, while sometimes fragments of bone refuse were present.

FEATURES

Section A. Hearth A-1. This hearth had an oval shape of 29 x 35", and first appeared at 8" below Junction. A large assemblage of firestones with ash and charcoal was present, but no artifacts appeared.

Hearth A-2. With an 18 x 23' oval shape, the depth of this hearth was destroyed by the bulldozer. It contained fire-cracked stones, and along its south edge appeared a polished square block of slate.

Refuse Pit A-1. This pit with a 12" diameter first appeared at about 8" below Junction, and had a 4" depth. Outside the pit and at depths of 5 to 7" appeared several projectile points: 1 Small Stem; 2 Small Triangular#4; and 2 Corner-removed#7.

Refuse Pit A-2. About 7" below Junction this oval pit, 12 x 15" in size occurred with a depth of 5". It contained a Stem knife, and a Stemless knife, both of felsite.

Refuse Pit A-3. This 6" shallow pit, 30" in diameter, contained a Corner-removed#7 point base, and near its edge appeared a knife base, both of felsite.

Section D. Hearth D-1. This deposit may have been a pit of some kind, possibly associated with a hearth, as it contained only a few firestones with a little charcoal. Its size was 14 x 29", with a depth of 9", which seemed to indicate a pit. No artifacts were found in direct association with it.

Hearth D-2. About 3" below Junction this 15 x 19" hearth appeared. It contained firestones and charcoal with fire-reddened earth beneath. At its top edge was found a Small Triangular#1 and an Eared#3 point.

Hearth D-3. This feature was 14 x 18" in size, and appeared at 10" below Junction. It contained firestones with fire-reddened earth in evidence, charcoal, and calcined bone fragments. A felsite base of a Tapered Stem point was recovered at its top.

Hearth D-4. This hearth had a round shape with a 25" diameter, and first appeared at 10" below Junction. Firestones, large chunks of charcoal, and some bone

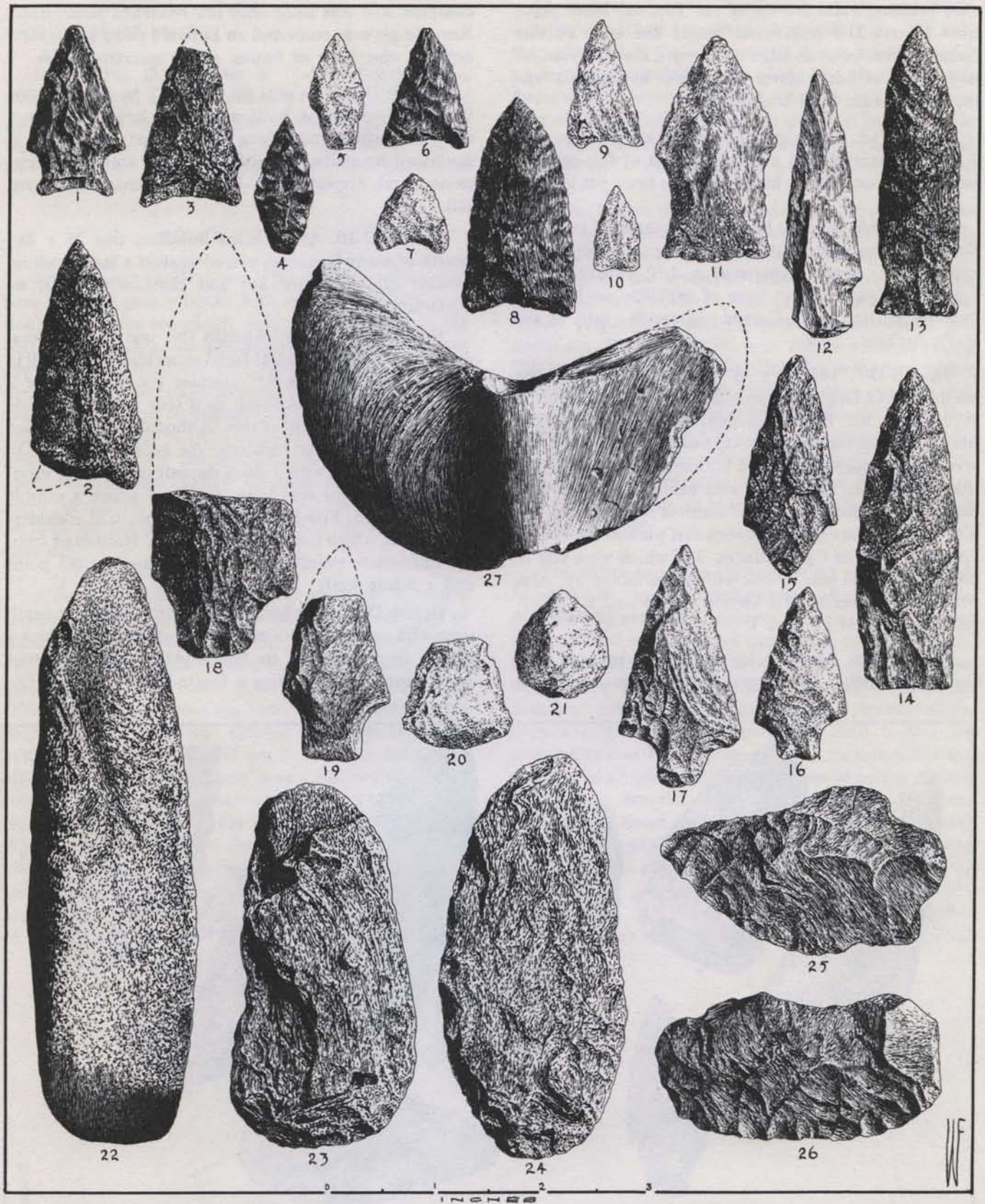


Fig. 5. REPRESENTATIVE RECOVERIES, Brook Meadow Site. 1-3, Eared#1,2,3; 4,5, Small Stem; 6-10, Small Triangular#1,4,5,6; 11, Import; 12, Corner-removed#3; 13, Side-notched#5; 14, Tapered Stem; 15-17, Corner-removed#5,8; 18,19, Corner-removed#7 Projectile Points; 20,21, Stem and Flake Scrapers; 22, Grooved Gouge; 23,24, Oval Scraper; 25, Stem Knife; 26, Stemless Knife. - (15-17, Early Archaic; all else, Late Archaic); 27, Wing Atlatl Weight.

were present, while the tip of the Tapered Stem point from Hearth D-3 was found beside one edge of this feature. Also, near its edge occurred a Small Triangular#4 point of felsite. Over the hearth at Junction was found a steatite bowl fragment.

Hearth D-5. This big oval hearth, 8 x 32" in size and 7" below Junction had a concentration of fire-cracked stones along one side, which may have been pot boilers.

Hearth D-6. Another hearth at the same 7" level had firestones, charcoal, and calcined bone. At about the same depth, nearby, appeared a drill of argillite; a Corner-removed#7 point base of argillite; an Eared#4 point of felsite; and a Corner-removed#8 point of the Early Archaic.

Hearth D-7. This 12 x 18" hearth was built on the north side of a large rock, probably used as a reflector. It occurred at 10" below Junction, and contained many firestones, ash and bone flecks, but little charcoal, and revealed fire-burnt soil at its bottom. It seems probable that this was an earth oven with heated stones used to bake or steam food. About 18" south of this hearth a 12" pit of charcoal occurred. Between this pit and the hearth appeared 6 felsite Cache blades, 3 of which were still in position, stacked side by side with edges facing up. Also nearby the pit occurred a Stemless knife and a Corner-removed#3 point (Fig. 6).

Hearth D-8. At 5" below Junction appeared this circular pit with a 26" diameter. It contained ash and

charcoal, and was lined with fire-reddened stone slabs. Near the pit were recovered an Eared#4 point and a side-notched one, both of felsite, also a quartzite knife.

Hearth D-9. This oval pit, 18 x 21" in size, had one flat-faced side as if built against a large rock as a reflector, which had long since been removed. It contained no artifacts, but had a small amount of fire-stones, and displayed fire-burnt and charcoal-stained soil.

Hearth D-10. At 4" below Junction this 25 x 26" hearth of many firestones placed against a large rock on its east side displayed ash and charcoal fill, but no artifacts.

Hearth D-11. Of all hearths this one was the least disturbed. There was a flat-faced stone slab lining, still in place, around a 30 x 33" circular pit. Inside were a number of rounded cobbles, as if they had been made ready to boil some kind of stew. Although the topsoil had been removed by the bulldozer the hearth remained in tact. It was filled with a thick deposit of charcoal interspersed with some very large pieces, of which a sample has been saved. Fire-burnt sand lay beneath at considerable depth, which indicated long usage. Recovered from the immediate vicinity were a Corner-removed#3 point and a felsite knife.

Hearth D-12. This hearth seemed to suggest an earth oven with extensive midden remains spread over about 6 square feet about it. In this midden area appeared several artifacts, including a felsite knife, a Small Tri-

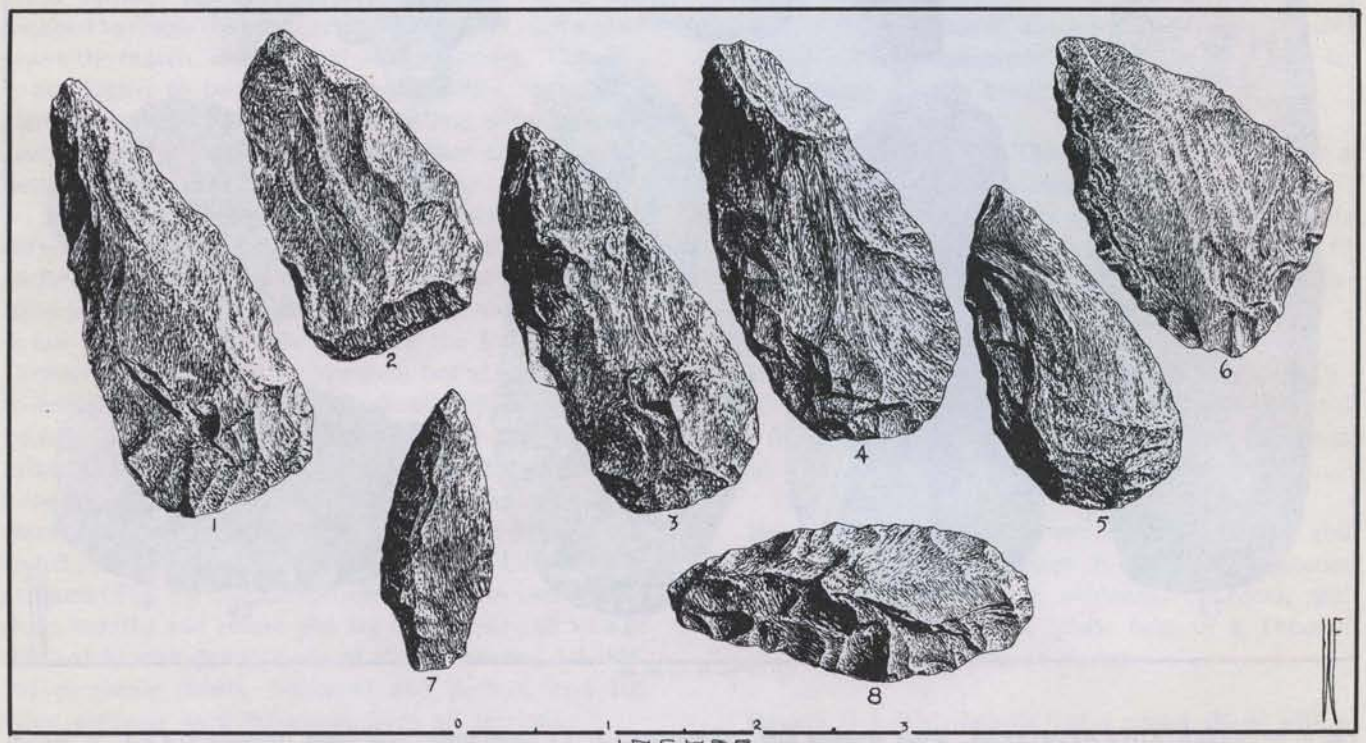


Fig. 6. RECOVERIES FROM HEARTH D-7, Brook Meadow Site. 1-6, Cache Blades; 7, Corner-removed#3; Stemless Knife.

angular point, and the end of a roller pestle on the south-west side of the hearth.

Refuse Pit D-7. About 8" below Junction this 25 x 27" oval pit with a depth of 8" appeared. Near the pit's top, lying side by side was found a felsite drill with its tip missing, and an Eared#2 point also of felsite. About 12" from the pit appeared an Eared#2 point base of felsite.

CONCLUSION

The writer has asked himself many times, what could have brought people to the hills of this site, how long would they have remained, and at what season of the year. In reviewing the possibilities, the site does not appear to have been one for short stop-overs. Rather it seems to have been a site at which occupancy took place over a long period of years at seasonal intervals, since artifacts, pits, and hearths occur at various levels from Junction down to 12" below. Furthermore, the occupants appear to have been the Late Archaics, to judge from the many diagnostic artifacts they left behind, except perhaps for the minor use of the site by a few Early Archaics.

Although the area appears too stony for desirable camping, two circular spots filled with sand free of stones, but with the typical gravelly soil below, were uncovered. They seem to have been deliberately resurfaced circular house floors of 10 to 14 feet in diameter. One of these sandy areas apparently was associated with hearth #10-D, which was located at its western edge. With this evidence to build on, it seems possible that other sand-filled house floors may exist, yet to be discovered. But admitting that we have reason to believe in repeated occupations of the site, the question arises: What were the attractions that brought campers to this stony location? Exploring the possibility that forest cover may have had something to do with it, existing evidence suggests that a hardwood growth, predominately oak as of today, may have covered the area then. For a stony

soil is more conducive to hardwood development, while a sandy condition attracts pine growth. Also, the red-brown topsoil of the site supports this assumption, as it represents accumulation over a long history of deciduous forest cover. Therefore might it not be that oaks were the primary attraction, with the occupants arriving in early autumn to collect acorns; dry, reduce them to meal, and store them for use during the ensuing winter months.

As the hills of the site present one of the coldest areas in the Boston basin during the winter, it seems probable that the site would have been abandoned when winter arrived, with the occupants moving to more sheltered spots, taking with them their harvest of acorns. This merely suggests one possible reason for the use of this camp site. There doubtless were others, such as taking fish in the Neponset River, and hunting in the area, which should have been excellent, including deer, moose, water fowl and wild turkey. The quantities of available cobbles of felsite, quartzite, and basalt must have served a useful purpose in furnishing material for projectile points and knives. Evidence of their manufacture lay all about, including quantities of chips and a high percentage of unfinished tools.

The writer proposes the probability that this Brook Meadow site was a seasonal camp to which people came to exploit its available resources, and to take advantage of its natural surroundings during the proper seasons. Cool summer breezes that are prevalent at this hilly site would have favored a summer occupation, and one complete pestle, beside 5 fragments so far removed might suggest acorn grinding in early fall. Add to this the probability that hunting was pursued, as a result of the presence of a high percentage of projectile points, knives, and scrapers, and the evidence seems complete. Here was a site where acorn meal along with smoked meat and skins were prepared and conveyed elsewhere for the long winter months ahead.

Canton, Massachusetts
March 25, 1972



THE WHALETAIL ATLATL WEIGHT

WILLIAM S. FOWLER

Stone age artisans had an eye for beauty, and produced certain products of their trade that were aesthetically attractive. Not only were they fashioned in well-developed symmetry, but in most cases were made from stones having unusual graining that often was enhanced with interesting color shading. This could reach all the way from black spots, and seriated gray or brown veining with intriguing twists, to fanciful color tinting in pale greens or reds. The selection of these stone materials must have required extensive experience, perhaps handed down from father to son through generations of stone-working labor. To have been able to judge what graining to expect from a gray colored uninteresting cobble before it was broken open, seems mysterious to us today, but not to aboriginal man. This is not to suggest that this sort of specialized stone selection preceded each product that was made. Apparently, only a comparatively few kinds of artifacts received this special treatment, and then only in certain culture periods.

This being the case, what then could be the reason back of this aesthetic selection of beautiful stones to have prompted in some instances such careful preparation of material? Merely the mention of two products that usually display unusual graining should suffice to suggest at least one reason. Presumed to be personalized adornments, they consist of Gorgets, and Whaletail pendants, to which outstanding mineral attractiveness obviously would have been a boon to the owner's pride. However, when it comes to such products as atlatl weights, which are believed to have been attached to spear throwers in pursuit of game, what can be said to explain the presence in these tools-of-the-hunt of fanciful stone graining? Reference here is made not to the Oval atlatl weight, but to the Late Archaic Wing type, and to its Whaletail variant. These latter artifacts invariably appear made of rare and beautifully marked stone materials, apparently intentionally selected. What possible significance could such choice stones have had in the mundane occupation of obtaining game for survival? And why do we find the probable preceding Early Archaic Oval atlatl weight — used similarly as the Wing type on the spear thrower, as proven by its customary flattened face on one side — made of plain drab nondescript stones, with only superficial graining showing in a few instances. These are questions that need to be answered if archaeological research is to perform its important function of interpreting tangible evidence. Not that anyone has the final answers, but rather that observations of such diverse conditions, found in these two functionally related types of artifacts, should be exposed for reasonable discussion and interpretation.

Of prime consideration is the question: which came first, the Oval weight or the much more attractive Wing atlatl weight? Or were they both made and used by people belonging to the same culture? While no clear stratigraphic separation has appeared in this area to clarify this point, one important piece of associated evidence tends to throw some light upon the subject. This has to do with the stone bowl industry, definitely a chief culture determinant of the Late Archaic period. The fact is that the Wing weight has appeared in a stone bowl steatite quarry, while the Oval weight never has. This seems to suggest that the two weights may belong to separate cultures. And further, as Oval weights have not occurred with excavated recoveries of the last culture period, the Ceramic-Woodland, the presumption is that they came before the Late Archaic. Also, as no style variations have been found to indicate that the Wing type evolved from the Oval, or vice-versa, the belief that racial continuity existed between the two is untenable. Therefore, in the course of logical reasoning, it seems justifiable to proceed on the assumption that each was developed separately in point of time, by people of two different culture backgrounds. This then may go a long way to explain why apparent unusual care was used in selecting fanciful grained stone materials for Wing atlatl weights, while no such search seems to have been made for the Oval type, which occurs in plain earthen colors.

Up to this point the Wing atlatl weight has been frequently mentioned as the type having beautiful mineral graining. However, this report has chosen to concentrate on the chief variant of the Wing type, which has distinctive traits that are unique enough to place it in a different classification. Known as the Whaletail atlatl weight, it differs from the Wing type mainly in that its tail fins in place of wings converge sharply to points, resembling more the tail of a whale than the wings of a butterfly or bird. Usually the tail fins are relatively narrow with a wide open spread. Sometimes, however, they are broader with an upward sweep, which does nothing to spoil their appearance as that of a whale's tail. Above all else, the important trait to note here is the fantastic graining of the various stone materials used for these weights. In this respect they have the same natural beauty as found with the Wing type. Furthermore, a specimen uncovered at the Heard Pond site in the Sudbury River Valley appeared in the same Late Archaic stratum below the loam that has produced the Wing type. Therefore, it seems that culturally these two types of weights may be considered interchangeably, as having been produced by people of the Late Archaic.

During extensive excavations on the north shore of

Assawompsett Lake by the Cohannet Chapter of this Society, a remarkable specimen of a Whaletail atlatl weight was uncovered at Wapanucket #8 site. Its proportions and mineral graining are so outstanding that this paper has used it as the basis for discussion. As is usually the case with atlatl weights, the Wapanucket specimen was fragmented. Either by frost action that often works from within the central perforation to split the artifact in two, or from other causes, atlatl weights are almost never found whole. For this reason, in order to adequately reveal how they looked originally, it has been found desirable to make restorations, often reconstructing the missing half, as was done for the find at Assawompsett. This case specimen was recovered from a level in the yellow subsoil below the loam. Two contiguous sections comprising one tail fin and most of the area surrounding the central perforation were uncovered, but at somewhat different levels, indicating soil disturbances of some kind. As a matter of fact, excavations at this site have been unable to establish well-defined culture levels on account of apparent redistribution of soils by high wind action off the lake during early occupations. For this reason, recoveries so far have been treated typologically. However, several radiocarbon measures of charcoal deposits from the site have been made with dates ranging from about 4,300 to 4,700 years ago. These could well include the Whaletail weight of this report, placing it in the probable first millennium of the Late Archaic, which is thought to have had its beginning about 5,000 years ago.

This outstanding example of a Whaletail weight, developed by a stone age artisan through skillful utilization of fantastic graining of a selected stone material, has almost unbelievable artistic qualities. It is no exaggeration to say that it is the most beautiful specimen of this type of atlatl weight, as far as artistic mineral graining is concerned, that has ever been recovered, so far as is known. Add to this the rich greenish-brown shaded coloration of its veins, and the reader may come to realize that this is not an overstatement. So that a fair judgment may be made, an illustration has been prepared by meticulous pen work in an effort to present a true

portrayal of this extraordinary piece of stone work (Fig. 7).

A few statistics about this specimen may be helpful in acquainting the reader with its physical proportions. The tail spread from tip to tip measures $6 \frac{3}{4}$ ", with unusually even tapering extending to the ends of the tail. The perforation through the center has a $1 \frac{1}{2}$ " diameter; is slightly enlarged toward the base. This apparently indicates that the weight was slipped onto the atlatl from the smaller hook end, base first. When it came to rest near the larger handle end, wedged on in an immovable state, the flare of the tail fins would have been away from the operator's hand. This is true, also, for all atlatl weights of the Wing type. On one face of the case specimen, half way between tail tips, is an interesting decoration that runs vertically in the same direction as the perforation. It projects as a boss, and at first glance appears to resemble an ear of maize. However, this is improbable, as the coming of maize into the Northeast, indicated by documented evidence, probably occurred more than two thousand years later. It may be that, instead, it represents some kind of wild fruit, or possibly is merely a simple decoration. Still another possible explanation may be nearer the truth. Certain seeds were recovered at the site in association with its Late Archaic remains, and were submitted for identification to Dr. William Rice of the Seed Laboratory at the University of Massachusetts in Amherst. Strange as it may seem, Dr. Rice succeeded in causing the seeds to germinate, in spite of their dormancy for more than 4,000 years. The resultant plant proved to be a kind of sweet fern with fronds in pairs along its stalk, instead of staggered one after another as found on the stalks of modern sweet fern. Hence, the bossed design might conceivably be an attempted representation of the ancient fern variety with its fronds spaced in pairs.

The important thing to note is that the opposite face of the weight, in place of a corresponding bossed enlargement, is more or less flattened, thus reducing the thickness of stone at this point. Experiments have shown

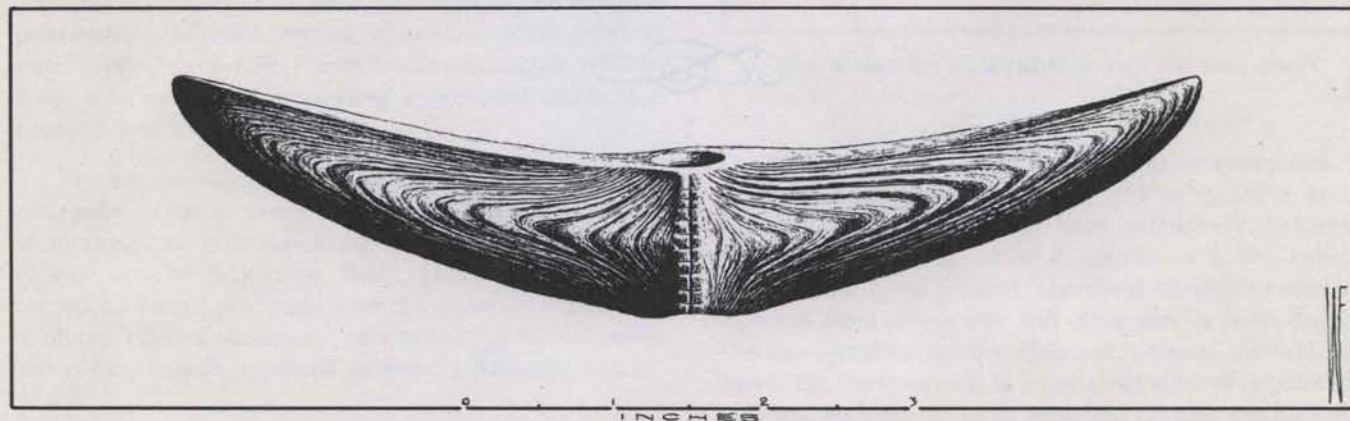


Fig. 7. WHALETAIL ATLATL WEIGHT (restored); Wapanucket #8 Site, Assawompsett Lake.

that this thinning probably was intentional, so that when the weight was properly positioned, it would have allowed the spear shaft to lie close enough, so as to be grasped by the thumb and forefinger of the hunter. The tail fins bulge gracefully toward the center section to a thickness of about 5/8", and are polished all over with great care.

CONCLUSION

To stop here would seem to leave perhaps the most urgent interpretation of the evidence suspended in mid air, with one's curiosity aroused as to why the Late Archaic Wing and Whaletail atlatl weights were invariably made of fanciful grained stones, while the preceding Early Archaic Oval weights were not. For one thing it would seem that this dissimilarity supports our former reasoning that culture separation exists between the two, namely because evolutionary development of form is lacking from one to the other. After this, which seems to be a reasonable interpretation, what more might be said about the aesthetic difference that exists between the two types of weights?

Assuming that the Oval type preceded the Wing and Whaletail types — additional qualifying evidence is still being sought — and that it was a product of the Early Archaic hunters, one thing seems clear. The makers of the Oval weights showed lack of aesthetic appreciation to the extent that a plain drab stone seems to have been accepted as satisfactory for the functions required of it. This choice, from a purely practical standpoint, would appear to place these Archaic hunters in a less advanced stage of development, quite in keeping with their projected earlier nomadic hunting existence. From this, it might be inferred that larger animals than deer, with seasonal migratory habits like caribou, would have been the principal quarry that kept these Early Archaic hunters on the move. And with their thoughts concentrated on survival, it seems unlikely there would have been much incentive for art appreciation. Consequently, excluded would have been such a useless thing as a search for fancy stones, when plain ones,

quickly procurable, fully met their hunting requirements.

Not so with the Late Archaics, who apparently were a different kind of people, with a more highly developed lineage. There is evidence to show through the projectile points they left behind that they were migrants from areas to the west of New England, such as the Hudson River Valley and eastern Pennsylvania. As a result of ritualistic evidence associated with their remains, it now appears evident that their cultural life was less nomadic, and had progressed past a purely hunting stage. For example, in their burial of the dead they left behind cremation remains, in which a regard for religious rites may be clearly noted. But what is more, certain associated evidence shows that they appreciated aesthetic values, as is suggested by their use of Magic Stones, recovered from some secondary cremation burials.

Such a culturally-guided people would have shown interest in other forms of artistry, it would seem, to which their Wing and Whaletail fancifully grained atlatl weights might well belong. Beyond this, however, there may have been something more than the beauty found in certain stone materials that influenced their selection. With the people's obvious respect for spirit worship, seen in their cremation ceremonials, would it not have been natural for them to have expected magic returns from stones with unusual markings or colorings, as also revealed in the case of Magic stones? And once such specialized stone materials were selected for atlatl weights, use of them would have become an established custom, with a continuing search for them a necessity.

Besides this, it is conceivable that the spirit believed to be in these stones would have been thought of as guiding the thrown spear more accurately to its target. Probably in the Late Archaic some such magic belief as this would have existed to explain the repeated use of beautifully grained stones for atlatl weights, such as that of the illustrated Whaletail recovery from Wapanucket #8.

Bronson Museum,
December 22, 1972



FORT HILL FIELD SITE

WILLIAM S. FOWLER

During the spring of 1972 a diligent member of the Society, William Vigneault, made plans to excavate a site in North Middleboro in the upper reaches of the Taunton River. After receiving permission from the owner, William Bushman, to excavate in such a way that the loam and subsoil would be replaced without mixing, Vigneault excavated a respectable area as shown by the accompanying map (Fig. 8). As the work progressed he made many journeys to the museum to confer with the writer as to the meaning of certain features, and to display his recoveries for verification as to their proper classification. As a result of this close collaboration careful records were made in the field and reported on file cards, as to the depths at which artifacts appeared, measured to the nearest inch. Finally the recordings were posted on a master chart for study, as to their various depths and probable respective culture association.

While the number of identifiable recoveries amounting to 69 is relatively small, it is possible to reason in somewhat general terms about them, and learn something about their culture relations from their stratigraphic distribution. Also, this study is quite worthwhile, since a number of rare finds were made that are worthy of notice.

The site is located on the southern side of the Taunton River in an open field, once extensively cultivated. As will be noted from the map layout, it is on elevated land that continues to rise abruptly around a sharp bend in the river. The excavation lies about 200 feet from a never-failing spring under the river bank; an important asset that should have made this a favorite camping place. Not far removed in an easterly direction on a steep rise at the river's bend are the post mold remains of a small palisaded fort, built and used by the Indians of this area in colonial days. Although no artifacts were recovered in the fort itself during its excavation by a Society group, a subsequent excavation by the William Taylors and others of an area just back of the fort was productive. Included among recovered stone artifacts were several projectile points made of copper cutouts from colonial kettles, indicating a probable connection between site and fort.

The excavation reported in this paper lay in close proximity to these several features, which gave promise of success, and influenced Vigneault to concentrate his efforts in the adjoining field. Here many surface recoveries have been made over the years, and here the William Taylors succeeded in uncovering an extensive red ocher deposit, reported in *Society Bulletin*, Vol.32, #1&2.

Four sections were alternately laid out in 5 foot

squares by Vigneault and dug successively. The Junction, the dividing line separating loam from subsoil, was used as the base line to which the vertical positions of recoveries were measured. The loam from one square was first excavated by scraping and laid to one side. Then the yellow sandy subsoil was similarly examined and placed in another pile. As work extended into an adjoining square, the first was refilled with its soils, loam over subsoil, so as to return it to its original condition.

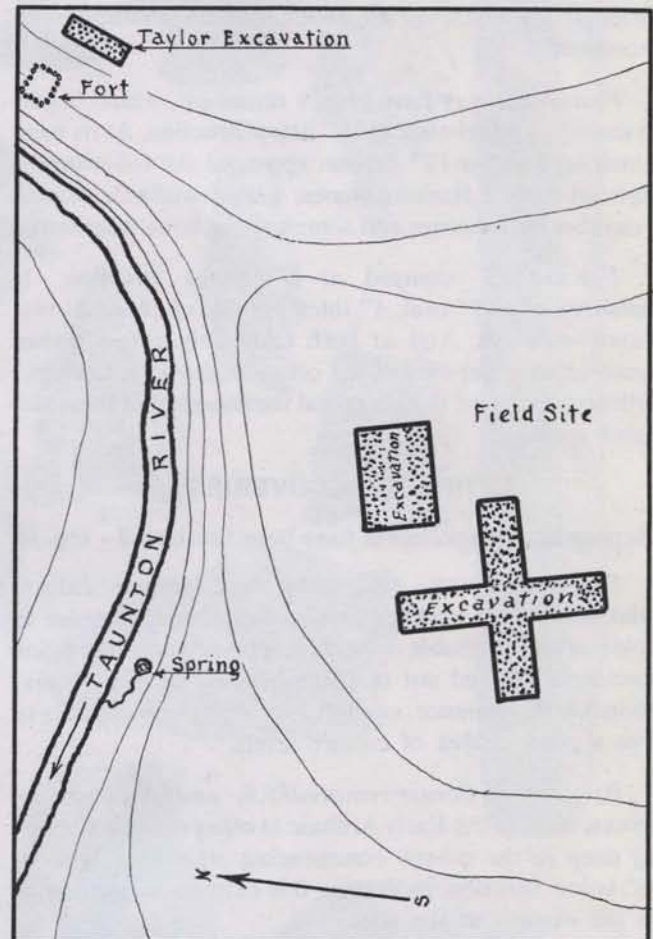


Fig. 8 MAP OF EXCAVATIONS, Fort Hill Field Site

So far as reliance on stratigraphy is concerned, it should be observed that loam and probably a small amount of top subsoil had been extensively disturbed from yearly plowing. Other disturbances in the subsoil also seemed to be present, the worst of which probably resulted from refuse pits and other service holes dug by the aboriginal occupants. However, some of the evidence below the loam seemed in its original state of deposition, and will be referred to as revealing culture significance. Certain projectile points have been disqualified because

they were found in pits, of which the level of origin could not be identified.

Several features reveal conditions that indicate an importance to the site as a permanent camp, which may have been used repeatedly over a long period of time. Beside this evidence several hearths were uncovered, and numerous firestones were found scattered around at different levels.

Feature #1 consisted of what appeared to be a workshop at 8" below Junction. Here was found a large anvil-stone 8 x 8 1/2" in size, apparently resting in the charcoal remains of an old hearth. Stone chips of different materials lay all about, but no artifacts were recovered.

Feature #2 may have been a refuse pit, which began to show pit disturbance at 18" below Junction. At its base which lay another 12" deeper, appeared the following: a Hatchet club, 2 Hammerstones, 6 unidentifiable stones, a number of firestones and some animal bone fragments.

Feature #3 occurred at 6" below Junction. It consisted of a 21" oval, 4" thick deposit of charcoal bits mixed with ash. And at both ends only a few inches removed were deposits of red ocher mixed with sand. No artifacts appeared to help reveal the meaning of these red paint remains.

ARTIFACT RECOVERIES

(Representative specimens have been illustrated - Fig. 9)

Projectile points, since they best indicate culture relations, should perhaps first be mentioned, in order to point out the probable cultures involved. And while a few specimens seemed out of place because of some unexplainable disturbance, enough appeared to be in place to give a general idea of culture levels.

Bifurcated; Corner-removed#5,8, and 9 points — proven to be of the Early Archaic at other reliable sites — lay deep in the subsoil commencing at bottom level of 16" below Junction, indicating this culture occupation to be the earliest at the site.

Eared#2, and 4; Small Triangular#4; and Small Stem points — associated with Late Archaic remains elsewhere — appeared at various depths below Junction, but above the aforementioned Early Archaic points, signifying a Late Archaic occupation.

Corner-notched point (Exhibit #15) — appearing at the end of the Late Archaic at other sites — was represented here by one fairly large specimen of brownish-gray, fine grained felsite of probable Pennsylvania provenience. It was uncovered at 3" below Junction.

Small Triangular#5 points — straight lateral sided belonging to the Ceramic period elsewhere — occurred at

this site from 1 to 6" above Junction in the loam, representing presence of the last culture occupation of the Ceramic-Woodland, lying above the Late Archaic zone.

Besides knives and scrapers of various recognized types, which were scattered throughout the different levels, there appeared several outstanding artifacts. These, it would seem, deserve special notice, as well as mention made of their respective culture levels where found.

Whetstone (Exhibit #30) — not diagnostic of any one culture at other sites — this artifact was uncovered 3" below Junction in the Late Archaic zone. It displays interesting trait irregularities. Evidently when first used it had a perforation at one end, presumably made for the purpose of hanging it up when not in use. However, at some time due to an accidental fall this end had been fractured, making the hole useless. Thereafter, a narrow groove had been incised around the opposite end, probably as a replacement for the hole to provide a means of suspension.

Elbow Stone Pipe (Exhibit #16) — made of fine grained chlorite — this rare find was uncovered 8" below Junction in the Late Archaic zone. A large part of the elbow bowl of this small pipe was in tact, while part of the rim and all of the stem were missing. However, enough remained to permit restoration as illustrated. The pipe is extremely well-made, with a smoothly worked even surface overall.

Plain Gouge (Exhibits #33,34) — proven elsewhere to belong to the Late Archaic — these 2 perfect small specimens were recovered from two depths respectively: 7 and 11" below Junction. Inasmuch as the deepest specimen was in the top of the zone assigned to the Early Archaic, perhaps it should be considered as intrusive at this level, as a result of some imperceptible disturbance. For the Early Archaic gouge type found associated with this early culture at Twin Rivers, Swan Hold, and Oak Island sites is the Channeled gouge. Whether the Plain gouge may also belong to the Early Archaic as well as to the Late Archaic has not as yet been proven beyond a possible doubt at any site known to the writer.

CONCLUSION

Although this site report covers only a comparatively small excavated area with relatively few recoveries, some aspects of it are worthy of note. For one thing, it is significant that points of the Early Archaic commenced to appear at the deepest level of 16" below Junction, and were the earliest points at the site; no other recoveries were made below, down to the white glacial sand to which excavation was carried. For another, it is important to note — confirming evidence found at other

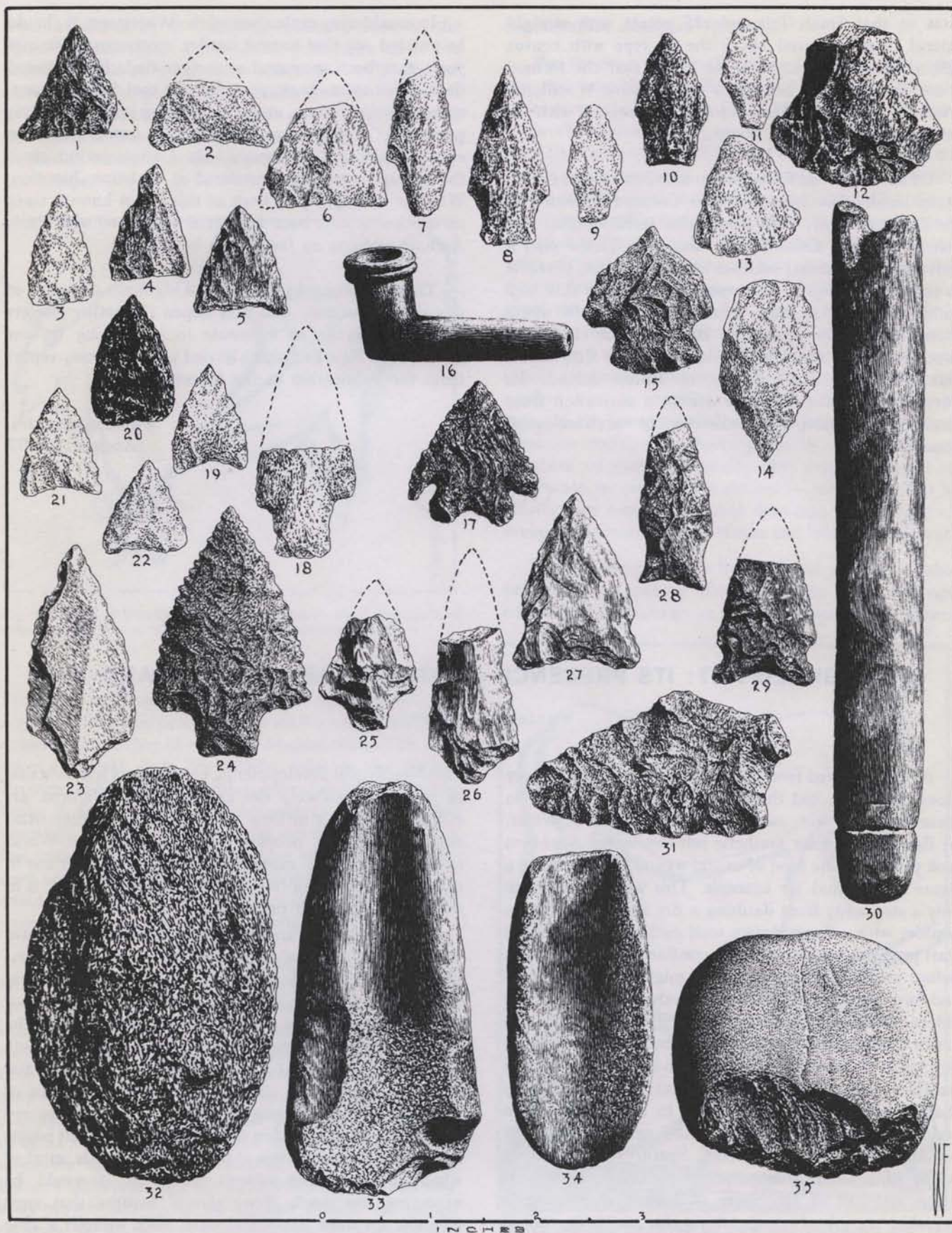


Fig. 9. REPRESENTATIVE RECOVERIES, Fort Hill Field Site. 1-6, 19-22, Small Triangular, 7, Corner-removed#3, 8, Side-notched#1, 9-11, Small Stem, 15, Corner-notched, 17, Bifurcated, 18, Corner-removed#7, 23, 26, Corner-removed#8, 24, 25, Corner-removed#5, 27-29, Eared Projectile Points; 12, 13, Stem Scraper; 14, Reamer; 30, Whetstone; 31, Stem Knife; 32, Oval Scraper; 33, 34, Plain Gouge; 35, Edged Hammerstone (primary flaked thin edge, used in flaking small artifacts).

sites — that Small Triangular#5 points with straight lateral sides appeared above the #4 type with convex lateral sides. This supports the belief that the former, found in the loam, belong to the Ceramic-Woodland, while the latter from the subsoil are associated with the preceding Late Archaic occupation.

Of all the special finds, not to mention recovery of an exceptionally fine specimen of a Corner-removed#5 of the Early Archaic, with meticulous serrations, at 12" below Junction (Exhibit #24), the small Elbow pipe is outstanding. Unusual because of its small size, it seems to represent a highly developed pipe-making skill well within the Late Archaic, because of its depth where found at 8" below Junction. Its quality of chlorite is superior to any noted by the writer at the well-known Oaklawn stone bowl quarry in Rhode Island. Its purplish-gray color seems to denote a derivation from some chlorite deposit unknown to archaeological research so far.

In considering evaluation of the Whetstone, it should be pointed out that several similar specimens in former years have been recovered as surface finds from plowed fields. This seems to suggest that this tool for the sharpening of gouges, axes, and other cutting implements was present in Ceramic times. However, apparently its source extends back into the former Late Archaic period, since the site specimen was uncovered at 3" below Junction. Whether its origin goes back of this is not known, since no specimens have been recovered associated with Early Archaic remains so far as can be learned.

These few remarks will serve to highlight the value of this site excavation. And it is hoped that other Society members may be as fortunate in uncovering further mysteries of New England's buried past, and may report them for publication in the Society Bulletin.

Bronson Museum,
August 15, 1972



FIGURED ART: ITS PRESENCE IN STONE AGE NEW ENGLAND

WILLIAM S. FOWLER

As man evolved from an ape-like animal, somewhere along the way he had the God-given desire to portray in some fashion objects associated with his daily activities. At first this urge for aesthetic self-expression doubtless took place in some kind of casual way: a finger tracing a figure in the mud for example. This would have been only a step away from daubing a dry surface such as a boulder with a finger-drawn mud outline. While such a start probably would have been confined to juvenile play, before too long this simple effort might have caught on and have been exploited by more mature thinking of the elders. Whatever happened to lift this elementary art-desire of humans onto a higher plain, where it could be developed by more advanced media of expression, can only be a guess at best. Evidence points to the probability that it took untold millenniums to evolve, and then suddenly it came to flower in the cave paintings of southern France and northern Spain. Whether other forms of figured artistry preceded these remains is unknown. But at last, here in cavern recesses is a valuable record of man's thirst for aesthetic values through mural likenesses of animals of the day. While this is Old World evidence, unrelated except indirectly

with New World developments, nevertheless it is valuable in revealing probably the earliest known figured art efforts of humans in their climb from animalism. And since New World peoples emerged from Old World cultural groups, this expressive art seems as important to consider in studies of New England aborigines, as it is in studies dealing with primitives of the Old World.

In recent years various books and news media have published accounts of several Pyrenees caves with illustrations of Paleolithic colored drawings found on their cavern walls. It is the intention of this paper, with illustrations of only a few of them, to call attention to the remarkable ability of the cave artists with a few sweeping curves to depict what appear to be animated animal drawings. First, with chalk, then with deft strokes of probably a bundled split reed brush the primitive eye guided the artist's hand in depicting with pigment paints important characteristics of prehistoric animals, most of which are now non-existent. However, it would be expecting too much if we should assume that such effective art work happened all at once without a long previous period of evolutionary art development in which inferior drawings might have occurred. The superior

work as found in the famous Altamira cave in the Spanish Pyrenees, of about 12,000 years ago, led to the belief that this cave and a few others in the Pyrenees of about the same age exhibited all that could be expected in the way of this exciting primitive art. Such drawings as the Altamira bison, the best of its kind (Fig. 10), were praised as outstanding accomplishments of this Magdalenian Age.

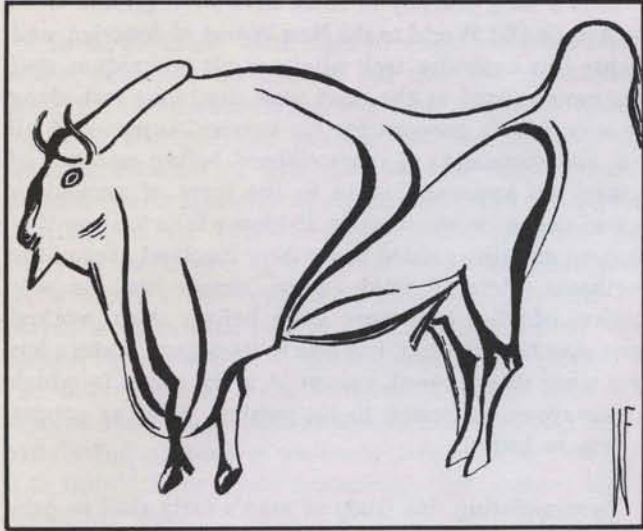


Fig. 10. OUTLINE DRAWING OF BISON, Altamira Cave. Facsimile of cave painting, about 12,000 years ago, Magdalenian Age.

Not until a more recent cave, discovered by two French school boys, was investigated in the 1940's did anyone realize that probably here were more ancient cave drawings preceding those of the Magdalenian. This cave takes its name from the nearby town in the French Pyrenees of Montignac. Experts have dated the drawings lining its walls of somewhere between 14,000 and 28,000 years ago. It was then that the ice age was receding from this area, which may suggest under what conditions the cave artists worked. This was during the pre-Magdalenian Age, a period in which cave drawings apparently were in a formative stage of development.

In order to make a more thorough assessment of the Montignac cave, a few years ago Life publishers sent their photographer to the cave with extensive lighting equipment, and for the first time made a complete color record of its painted drawings. Facsimiles of two figures from these colored photographs have been made for the purpose of demonstrating the more elementary work displayed, as compared to that in the Altamira cave (Fig. 11). These two Montignac figures of a cow and an unknown spotted female animal, estimated to date before 15,000 years ago, show art deficiency in portraying body proportions — female animals usually are shown pregnant as found in these drawings. This ill-proportioned art work is understandable, since evidently it was in a period of art development preceding the more

sophisticated Altamira paintings.

But the most outstanding discovery made at Montignac cave were two other drawings without color, thought to be even more ancient (Fig. 12). Obviously, both are the work of novices. One apparently is intended to illustrate the figure of a man (Exhibit #1). It appeared on the cavern walls next to a presumed contemporary rudely drawn bison with sketchy outlines (Exhibit #2). These drawings are estimated to date about 20,000 years ago at the peak of the Aurignacian Age. While most characteristics of the man-like figure are human beyond a possible doubt, drawing of the nose and mouth seems to have given the artist some trouble, with a result that looks more like the beak of a bird than the face of a man. Such crude black outline work, as shown by both the man and bison, probably produced with charcoal-tinted paint applied with a roughly made reed brush, seems to indicate the inexperienced work of beginners. And, if these two crudely done drawings can be said to represent standard art work of their day, they may well depict an early stage — perhaps the earliest — in man's effort to illustrate by means of figured drawings. In the cave all except these two drawings of man and bison were colored.

Various theories have been offered to explain what prompted the making of these various cave paintings, but without much to go on. Whatever caused this figured

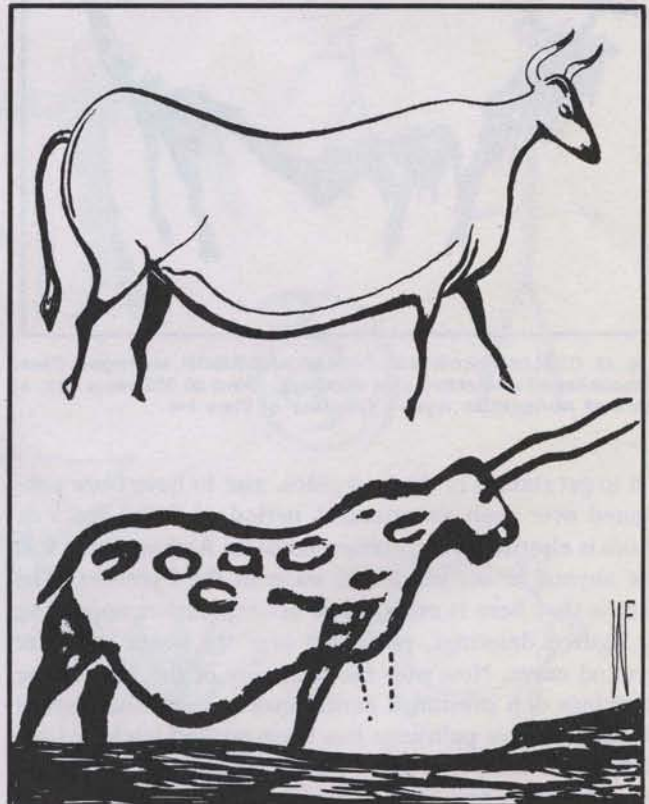


Fig. 11. OUTLINE DRAWING OF COW AND UNKNOWN SPOTTED FEMALE ANIMAL, Montignac Cave. Facsimiles of cave paintings, probably before 15,000 years ago, pre-Magdalenian Age — Courtesy of Time Inc.

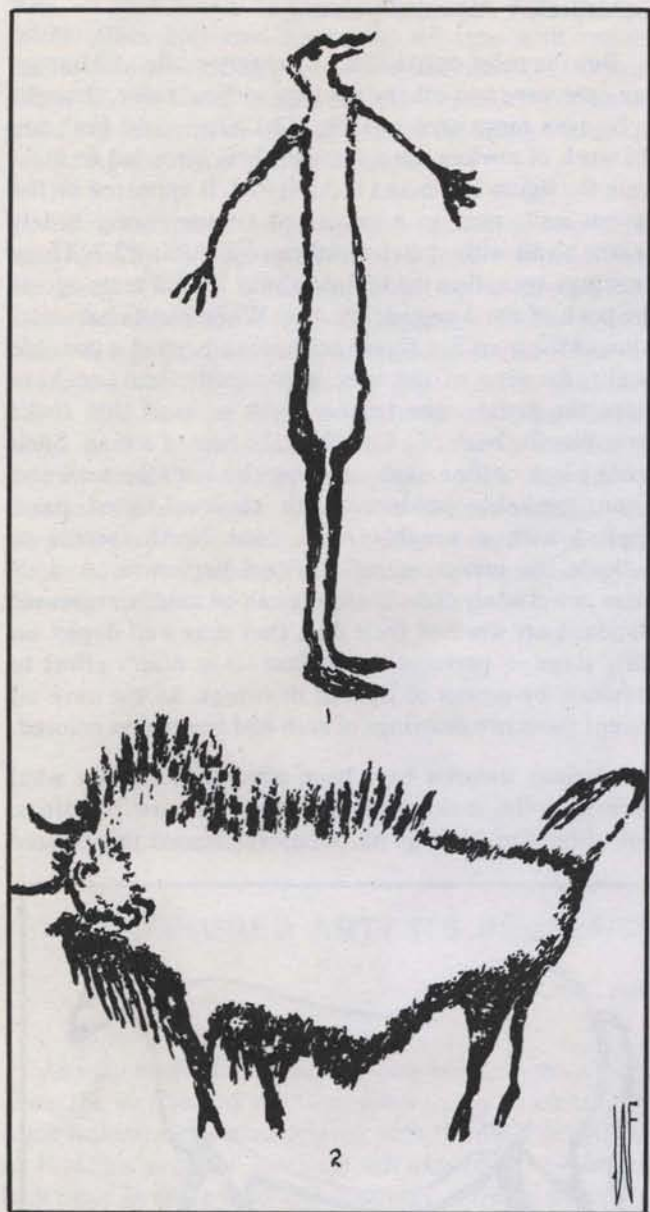


Fig. 12. OUTLINE DRAWINGS OF MAN AND BISON, Montignac Cave. Facsimiles of elementary cave drawings, about 20,000 years ago, at peak of Aurignacian Age — Courtesy of Time Inc.

art to get started in the first place, and to have been continued over such an extended period of 8,000 years or more is almost beyond comprehension. And yet there it is for anyone to see on cavern walls in the Pyrenees. The fact is that here is evidence of art-expression appearing in figured drawings, preserved over the years in underground caves. Now with the discovery of the Montignac drawings of a presumed earlier evolving art, the start of the age of cave paintings has been pushed back in time from Altamira some 8,000 years. It is of interest to give thought as to who may have done this art work. Were they a few individuals with art ability, or could they have been anyone of the hunters of the Paleolithic? While most human beings have to some extent a desire for art-

expression in some form, probably then as of now, only a comparatively few might have proved capable of wielding an artist's brush and of developing drawing ability. Therefore, it may be safe to imagine the cave paintings as being produced by qualified artists, who spent many hours in the cavern depths depicting the game of the day, perhaps with the idea of inspiring more success for those others who were committed to the hunt.

It is a long journey to trace man's emigration from the Asiatic Old World to the New World of America, and during this extensive trek whatever art techniques that may have existed at the start were doubtless lost along the way. Man's concern for his survival superseded all else, and thousands of years elapsed before evidence of figured art appeared again in the form of pecked or incised outline work on stone. Evidence fails to show that pigment coloring existed in the New England area of the Northeast. Here, figured carved stones are the sole survival of what may have gone before. Also, worked bone may have existed, but due to its organic nature has long since disappeared, except in a few cases in which preservatives happened to be present, such as copper objects in burials.

In completing this study of man's early skill in producing figured art, it seems important to have a look at some engraved stone work from this northeastern region. With several exceptions, it has been illustrated before in Society Bulletin issues, but at those times it was shown together with the stones on which the engravings were made. Now, so that a composite study may be made of the various figures, they are illustrated altogether but without their stone bases. Only non-controversial figures are included, and incised design work that does not depict figures is excluded. Most of the exhibits are taken from movable stones, while several are petroglyphs from boulders (Fig. 13).

These figured engravings are simple as compared to the cave drawings. Stone tended to discourage elaborate detail, especially when the engraving tools must have been confined to very hard stones such as quartz crystal, although in contact times they could well have been of iron. Even so, it is amazing to see with what precision many of the figures are incised with lines that meet without overlapping. This work seems to represent self-expression that exhibits artistic illustrative skill in possibly an embryonic stage. Who knows what the ultimate outcome might have been had the native cultures been allowed to continue into the distant future. But considered as we find it, this engraved art is a worthy accomplishment, and indicates presence of the human desire for art-expression in our northeastern aborigines. Here again, however, we are faced with the query: Who were the engravers? And, as before in the case of the cave artists, the answer seems to be the same.

Only certain individuals with artistic skill in handling pick or stylus, and with an eye for exacting detail, might have attempted this stone engraving. And even after admitting this, we can only guess at the reasons back of this kind of art work. As will become evident in the various figure descriptions and comments that follow, some have obvious associations with customs and practices of their day, while others cannot be deciphered beyond identification of the particular figure involved.

In scrutinizing these figured engraved-stones as a whole, it should be pointed out that the stone bases consist of comparatively soft workable materials, including, fine and medium grained sandstone, slate, and steatite. Because of this the engraver with a sharp pointed quartz crystal or its equivalent, found the work of incision possible. This has been a satisfying review and study for the writer, as it has furnished an opportunity for a better understanding of how art-expression has played a significant role in culture development from earliest ages. To what extent it aided in man's effort to rise, interrupted as it was at times by various interludes of force, is far from clear. However, it may be said that it had the full approval of society as a whole, which enabled it to unfold from crude beginnings into a more highly developed state.

FIGURED STONE ENGRAVINGS

While the group of stone engravings, as illustrated, is relatively small, it seems sufficient to represent a notable variation of subjects. They include art work extending over several thousand years, from the Late Archaic down to the Contact or colonial period here in New England. As a conclusion to this art study, it seems important to point out what is known about these engravings in so far as their probable significance is concerned, as gleaned from their various stone bases.

Exhibits #1-5 are easily identified as various engravings of the thunderbird, a sacred spiritual being, apparently respected throughout untold generations. The earliest known example of these five engravings is Exhibit #1. This is a pecked-out rendition on the face of a flat oval pebble from Wapanucket #6 site on Assawomsett Lake. It was associated with recoveries radiocarbon dated about 4,300 years ago. This was during the first millennium of the Late Archaic period. Exhibits #2,3 also are pecked-out examples of this sacred bird, but are petroglyphs on a boulder near Brattleboro, Vt., now submerged in the Connecticut River. Since these boulder engravings represent pecked work, it is possible that they too may date back to the Late Archaic. However, when it comes to Exhibits #4,5 that are engraved by incision —

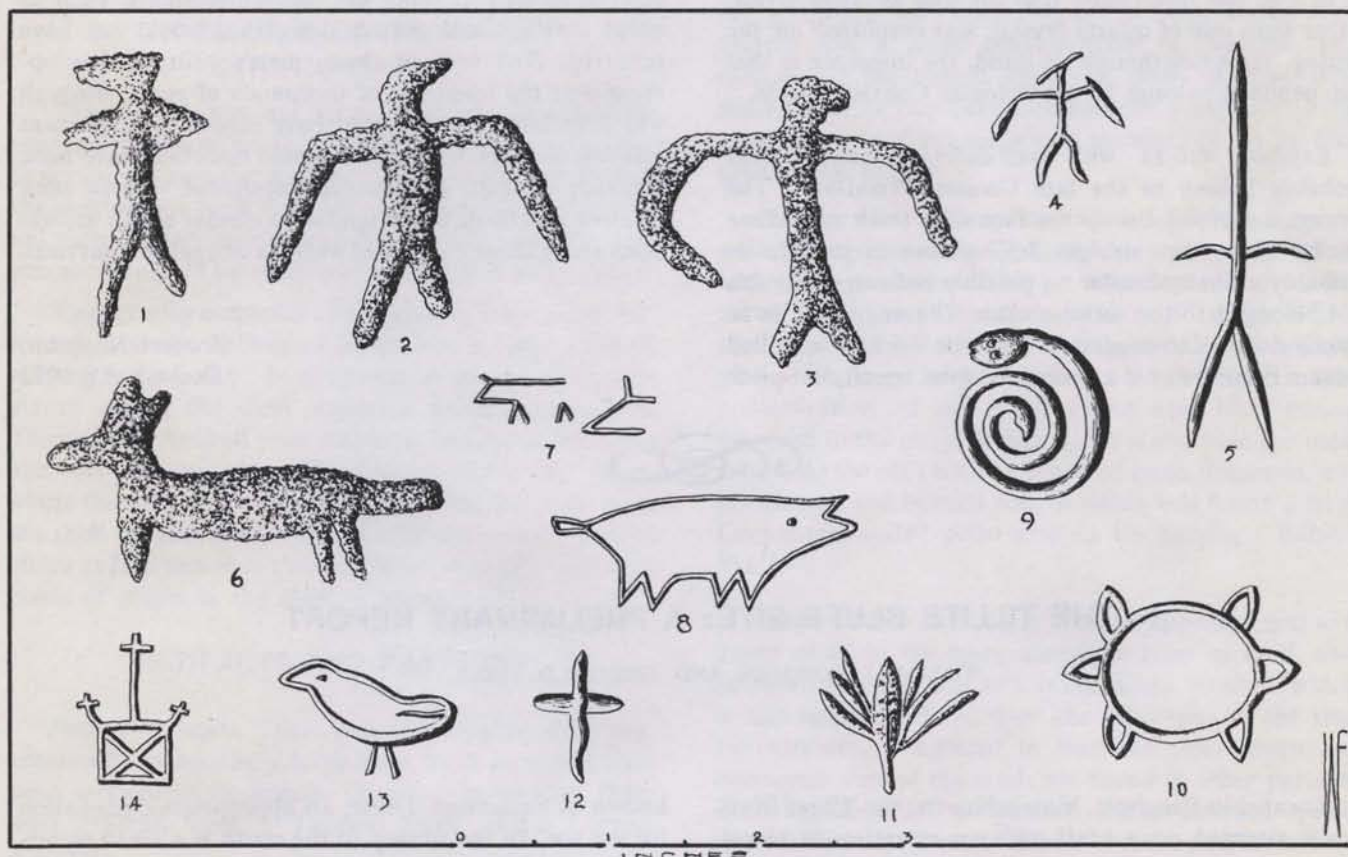


FIG. 13. FIGURED ENGRAVINGS FROM NEW ENGLAND (all to scale except 2,3,6). 1-5, Thunderbird (2,3, Petroglyphs); 6, Fox (Petroglyph); 7,8, Deer and Pig?; 9, Serpent; 10, Tortoise; 11, Sheaf of Maize; 12,13, Cross and Bird; 14, Christian Altar . . . 1, pecked on movable stone; 4,5,7-14, incised on movable stones; 2,3,6, pecked petroglyphs, Brattleboro, Vt.

#4 on a steatite bowl fragment, drilled for a pendant, the other, #5 on a flat sandstone pebble — the probability is that they belong to the late Ceramic-Woodland period, when incision first appears on Stage 3 ceramic pots as a diagnostic trait. These engravings of a much revered spirit — doubtless having occult powers — seem to indicate the presence of a religion that included the thunderbird as one of its spiritual elements. The small pendant, #4 probably served as a fetish.

Exhibits #6-8 clearly indicate three different animals, although their identity is not clear. Exhibit #6 may be a fox and is from the group of petroglyphs at Brattleboro; is produced by pecking, and probably is of the Late Archaic along with the two thunderbirds. Exhibits #7 and 8 are incised on thin, flat stones, of which the former — possibly a deer — is engraved on slate with a ground edge resembling a knife; the latter — animal unknown — is engraved on a thin, oval, flat, fine grained reddish sandstone with no evidence as to its use. Both probably belong in the late Ceramic because of their incised engravings.

Exhibit #9, a snake cut on the face of a perforated flat oval pebble, is probably a fetish pendant with spiritual powers of some kind. Its broad lines are so deeply incised as to give the impression that an iron or steel stylus, rather than one of quartz crystal, was employed for the cutting. With this thought in mind, the inference is that this pendant belongs to the colonial Contact period.

Exhibits #10,11 with well-defined incised lines probably belong to the late Ceramic-Woodland. The former, a tortoise cut on the face of a thick sandstone block with a worn straight 3/8" groove in its side — probably a Shaft abrader — possibly indicates that this tool belonged to the tortoise clan. The engraving is so exactly done as to suggest it to be the work of a skilled artisan. Exhibit #11 is a perforated thin, round, flat piece

of light creamish sandstone from Maine. Probably it is a pendant decorated with a sheaf of maize possibly ornamental in nature, although it might have been used as a fetish.

Exhibits #12-14 are figures apparently related to Christian conversion attempts during Contact times. Exhibits #12 and 13, a cross and a bird appear on opposite faces of a small perforated oval flat-faced stone, used as a pendant. Seemingly, the Christian cross, indicating a conversion was not enough as a guarantee for salvation from the Indian convert's point of view. He made doubly sure of a good life after death by engraving perhaps his clan's bird symbol on the opposite side of the pendant. However, the figure of a Christian altar on the face of Exhibit #14, another perforated flat faced, roundish pebble pendant suggests that in this case the Christian conversion was accepted without reservation by the convert.

The importance to primitive peoples throughout the ages of their self-expressed figured art may be imagined from this review of a few but varied examples of their work. Had it not been for the inherent aesthetic urge found in some individuals more than in others, brushed or engraved figures portraying familiar or imaginary objects, as well as other art accomplishments, such as effigy carvings and pottery designing, would not have occurred. And without them, man's cultural development over the hundreds of thousands of years, through which he has groped, would have missed an important refining element. Civilization would doubtless have been seriously delayed, or rendered impossible without such creative art effort, which tended to elevate man's aspirations above those concerned with his struggle for survival.

Bronson Museum,
December 1, 1972



THE TILLITE BLUFF SITE: A PRELIMINARY REPORT

WILLIAM F. BOWMAN AND GERALD D. ZEOLI

Located in Hingham, Massachusetts, the Tillite Bluff site is situated on a bluff with an elevation of about 20 feet above a nearby swamp. The bluff's bedrock is composed of a certain type of conglomerate, which is regarded by some as an ancient consolidated glacial till,

known as Squantum Tillite; an appropriate designation for the site. In the swamp to the south is a small water-filled kettle hole or pond, and it is probable that an outlet drained into Back River in early days, although modern developments in the area have now erased all signs of it.

The site contains a shell deposit that is important to the interpretations reached in the conclusion. As a matter of fact, other shell deposits surround the wooded swamp, in some cases amounting to shell heaps two or three feet in height. Obviously, occupants of the area depended upon shellfish to a considerable extent. And from this it seems probable that in aboriginal times canoe travel existed between the pond and ocean beaches by way of Back River. From tests made among the shell deposits, a similarity of projectile point recoveries is noticeable, suggesting a more or less unified culture. Add to this the probability that the pond may have been fed by springs in early times, and the desirability of this location as a camping place appears ever clearer.

As will become evident, the area excavated was relatively small. Only about 375 square feet were examined with limited recordings of 30 recognizable artifacts, many of which were broken. Of the projectile points, most were diagnostics of the Late Archaic, of which Corner-removed#7 points were the most plentiful. Only a few projectiles of the Ceramic-Woodland were uncovered, although recoveries from the general area have produced evidence that shows the presence in more or less equal amounts of both culture periods. Possibly the limited area excavated may account for this difference.

METHODS OF EXCAVATION AND STRATIGRAPHY

The area dug was laid out in 5 foot grids on a baseline running north and south. Short handled hoes were used in scraping down the squares with artifacts recorded to the nearest inch both vertically and horizontally. Individual records were made on suitable cards, and the data was accumulated for study on a master grid record sheet.

Stratigraphy consisted of a topsoil of loam about 10" in depth, at the bottom of which was a layer of shell, varying from 3 to 6" in thickness. A greasy black substance among the shell suggested human occupation. Throughout the shell were scattered numerous firestones and various stone chips. The bottom of the shell layer, where the subsoil commenced, was called Junction. Here the shell became scattered. All artifacts were uncovered either at Junction or in the shell layer, or in pits with their levels of origin in the shell or above.

ARTIFACTS AND FEATURES

Projectile Points. There were 6 recoveries of Corner-removed#7 in relatively large sizes, such as would have been serviceable on spears. Of other projectiles, there were 2 Small Stem, 1 Tapered Stem, and 1 Corner-notched.

Stem Knives. In this category were 5 specimens, mostly made up of large sized blades.

Stem Scrapers. There were 6 recoveries of these tools, all fairly large. Several had elongated stems, more or less pointed in form.

Grooved Hammerstones. This tool was well-defined and belongs to the hafted hammerstone type, of which there were 4 recoveries.

Grooved Gouge. Present in the recoveries appeared this tool with a slight concavity in its bit and a groove in its stem for hafting.

Wing Atlatl Weight. This recovery consists of half the weight, apparently separated into two parts from frost action, of which only one part was found. It is made of gray-black phillite, with graining and a fine mica content scarcely perceptible.

Abradingstone. An elongated sandstone tool, this specimen shows wear along one side with an abraded mark in evidence.

Representative specimens of these recoveries have been illustrated (Fig. 14).

Feature #1 — Stone Hearth. This feature consisted of an assembly of stones measuring about 2 feet in diameter, with its top slightly above Junction in the shell. Its total depth was 25", and scattered around it through the yellow subsoil were shell fragments. Near the hearth's bottom was a small concentration of charcoal, and throughout the hearth appeared chips of Blue Hills felsite. One or two Corner-removed#7 points and Stem scrapers made of this stone were uncovered from the area around the hearth.

Feature #2 — Refuse Pit. Excavation of this large pit with its top above Junction in the shell produced an important revelation. The pit measured about 3 feet across its top and tapered down to an 8" width, with a total depth of 31". It contained the usual shell remains with a few large bone fragments. Interestingly, a shell concentration of soft shell clams and blue mussel occurred in the pit, although oyster shells were the main refuse. At the pit's bottom appeared some firestones, bits of charcoal and burned soil, in which was found a large Corner-removed#7 point with its tip missing (Exhibit #11).

Feature #3 — Refuse Pit. This pit appeared first at a depth of 6" in the loam above the layer of shell, and extended to a depth of 31". It contained no shell, which in this respect differed from the other pits of the site. Furthermore, it differed in that the stone chips encountered were of materials not found in other parts of site. Significantly, a perfect Corner-notched point appeared in the pit made of basalt. Also, potsherds were recovered, one from a Stage 2 pot with vegetable temper, and several others with medium temper, cord-marked both sides from a Stage 1 pot. Also recovered from the

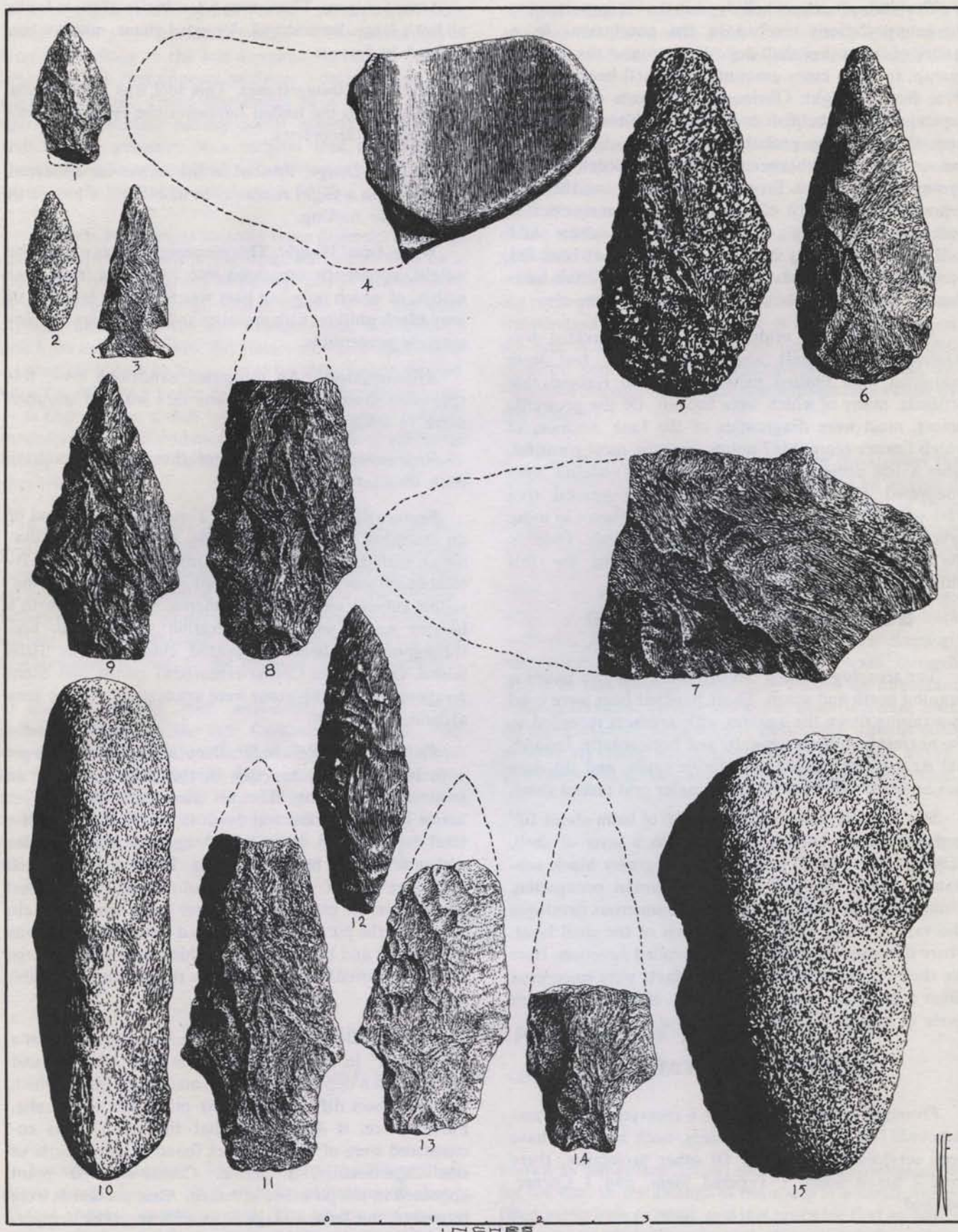


Fig. 14. TILLITE BLUFF SITE RECOVERIES. 1,2,Small Stem Pt.; 3,Corner-notched Pt.; 4,Wing Atlatl Weight; 5,6,Stem Scraper; 7,Stem Knife; 8,9,11,13,14,Corner-removed#7 Pt.; 10,Grooved Gouge; 12,Tapered Stem Pt.; 15,Grooved Hammerstone.

charcoal-fill of the pit were bone fragments, some apparently split for extraction of marrow, while other recoveries consisted of pieces of socketed deer bones.

LITHIC MATERIALS

Blue Hills felsite — a porphyritic felsite with pink phenocrysts — was the stone most frequently used for chipped stone implements. This stone was extensively quarried in aboriginal times, and may be seen *in situ* at Wamatuck Hill in Braintree, Massachusetts. It was used for many projectile points made in this area during the last three culture periods.

Black porphyry from Marblehead was also a favorite choice; was used at this site for some of the scrapers. Gray and red porphyry from Cat Island were also present.

Many chips of Hingham red felsite were noticed at the site. The stone may be seen in stone walls on Lincoln Street near the Hingham Police Station. The stone has a deep red color, interspersed here and there with sizable light cream feldspar crystals, which give it a porphyritic consistency. According to Prof. W.O. Crosby in 1880, p.92, the original outcrop of this beautiful stone is now under the roadbed of Lincoln Street.

A bright red fine grained felsite — possibly from a rare vein of Saugus jasper, so called — was used for one Small stem point.

Gray-black phillite — previously mentioned — was used for the Wing atlatl weight.

A highly patinated material seen in some chips may be extremely hard metamorphosed argillite.

Besides these lithic materials, chips were found of red rhyolite, sandy tan patinated basalt, and a blue-green to purple felsite — possibly a rare vein of Blue Hills felsite. It is believed that the sandy tan patinated basalt from which the Corner-notched point from Feature #3 was made — source unknown — may have been a late discovery in this area, where it was used for some projectiles of the Ceramic-Woodland period.

CORRELATION

With reference to the Corner-removed#7 projectile point, a type that seems to dominate the Tillite Bluff site, it is of interest to find that its form is similar to two point types in New York. Following Ritchie's classification, one is called Snook Kill. This point phase has been radiocarbon dated about 2,470 year ago. Another New York point is called Genesee by Ritchie, and its phase has been radiocarbon dated about 3,930 years ago. This type of point is common in the Genesee Valley of western New York, and is also found in the Grand River Valley in Ontario, Canada.

While these New York points resemble New England's Corner-removed#7, and may be related, their radiocarbon dates probably would not necessarily apply for specimens in this coastal area. The movement of settlers into New England, arriving from western regions, would have taken a long time, which doubtless would account for a corresponding long span between the two areas in the diffusion of implement traits. Furthermore, a radiocarbon date represents but one short moment in time and does not reveal how long the objects being dated — in this case Corner-removed#7 related points — were in use.

The authors of this paper feel that the Tillite Bluff site, although small, has produced evidence of a kind that would justify an interpretation as to the relationship of shell refuse to projectile points, especially Corner-removed#7, a recognized diagnostic of the Late Archaic. Accordingly, they have asked the Editor to add a few words in explanation of this shell-projectile point manifestation, based upon his experience over the years in excavations conducted on Narragansett Bay sites in Rhode Island.

CONCLUSION

The problem of arriving at a reasonable interpretation of the Tillite Bluff evidence is one in which first an examination should be made of the usual custom of glibly referring to a certain point type as being diagnostic of a particular culture. At this site it happens to be the Corner-removed#7 type, for many years spoken of as a point diagnostic of the Late Archaic. But when more thought is given to the subject, one is startled by the long period of about 3,000 years attributed to this Archaic culture. The question then is — being faced with a feature such as shell refuse in close association with Corner-removed#7 points — at what part of this extensive period were shellfish being eaten? For, without radiocarbon dating of the shell, to say that shellfish were part of the diet over the entire three millenniums of the period would appear irrational. If this were the case, then at all sites near the seacoast, shell remains would be found in quantity throughout all Late Archaic zones of occupation, which is contrary to the facts. In all excavations of sites along Narragansett Bay where shellfish remains were found in the Ceramic-Woodland zone of the last culture period, they were conspicuously absent in the lower Late Archaic zone.

Searching further for pertinent information concerning the problem, two excavated sites, one on Block Island Sound in 1949, the other along Narragansett Bay in 1954, both in Rhode Island, seem to hold the answer. At Potter Pond in South Kingstown, a site that formerly was a pasture, not disturbed by plowing, stratigraphy was well-defined. A heavy shell deposit covered the site from 2 to

52" thick, overlain by 2 to 6" of sterile humus. Below the shell was a black habitation accumulation without shell from 1 to 6" thick. Directly below this appeared a yellow subsoil free of shell. This extended through 4 to 8" down to coarse glacial gravel. These last two layers became the Lower Zone, containing stone bowl remains of the Late Archaic, while the shell-filled layer above became the upper Zone of the Ceramic-Woodland period.

In the upper Zone from its bottom extending up appeared sherds of Stages 1, 2, 3, and 4 pottery in this order. From this it is evident that the potters of the Ceramic-Woodland were shellfish eaters, while the settlers, who preceded them in the Late Archaic, were not. The answer to our problem now becomes clear, when we chart the stratigraphic position at this site of the recovered Corner-removed#7 points. There were 21 specimens taken from the Lower Zone and 3 from the Upper Zone near the bottom of the shell. It is evident from this that these point recoveries indicate an overlapping of the Late Archaic culture into Ceramic times. In other words, it appears that with arrival of ceramics the Late Archaics became the potters at a time, when shellfish had just become an accepted food.

Subsequently, the Sweet-Meadow Brook site in Apponaug was excavated. This also was an undisturbed shell deposit site with good stratigraphy, revealing an Upper Zone consisting of shell containing Stages 1, 2, and 3 potsherds. Directly below was a Lower Zone in the subsoil with no shell refuse, containing stone bowl and

implement remains of the Late Archaic. Again at this site Corner-removed#7 points appeared first in the Lower Zone and again just above in the shell of the Upper Zone, indicating as at Potter Pond an overlapping of this type of point with a similar implication. That is, that with the introduction of pottery-making the Late Archaics began to eat shellfish, and from then on became the Ceramic occupants of the site.

Toward an interpretation of the evidence at Tillite Bluff, these two previous site excavations should tend to show what may have occurred at the Hingham site. Here, as in Rhode Island, appearance of Corner-removed#7 points among shell deposits probably indicates the eating of shellfish at the close of the Late Archaic. Also, it is likely that potsherds, which should reveal arrival of ceramics at this site, might well appear in the shell, if further work were done to extend the excavation over a much larger area than that already dug.

So far as the potsherds found in refuse pit, Feature #3, are concerned, it seems probable that ceramic potters were present at the site at a time when shellfish were being eaten, although no shell refuse was present in the pit. The situation that might have existed in explanation of this anomaly is simply that no shellfish were on hand and being eaten at the moment when the pit was in use. These seem the logical conclusions to be reached from the limited evidence available.

North Weymouth,
February 3, 1973



OTSTUNGO EFFIGY CERAMIC PIPES

WILLIAM S. FOWLER

Scarcely a day at the museum passes without a challenge received that leads into the field of research. In the present instance, it has to do with the subject of smoking pipes and their restoration. More specifically, it concerns a particular effigy ceramic pipe from New York that was in need of repair to restore it to its original shape. It was brought into the museum by Dr. Zariphes, who had obtained it from a collection of effigy pipes at the Otstungo site in the Mohawk River Valley. Here at this well-known source of ceramic effigy pipes many unusual examples of the pipe maker's art have been found during more than a half century. Mostly in a fractured condition, these Elbow effigy pipes have been

recovered from plowed fields, and surprisingly enough, are still being picked up at this site, located near Canajoharie in the town of Minden.

As observed today in the Otstungo pipe collection, an unbelievable variety of animated objects have been expertly modeled on pipe bowls, including: bears, wolves' heads; birds, some with beaks wide open; pigeons and owls; serpents; lizards, one with its tail wrapped around the pipe stem; human faces finely worked; and sometimes even human bodies. The pipe brought in for restoration had a small human face worked into the bowl's top rim facing the stem, undamaged and in good condition.

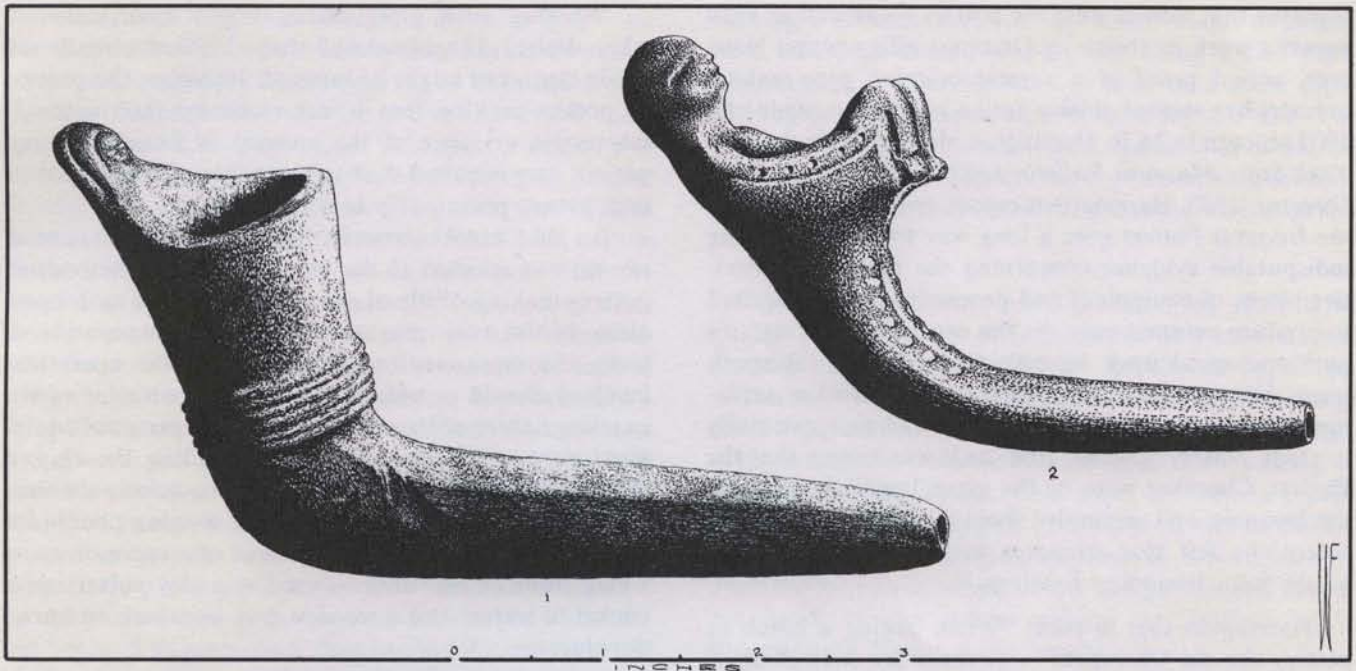


Fig. 15. EFFIGY CERAMIC PIPES (restored), Mohawk Valley. 1, Otstungo Site; 2, Probably Otstungo from vicinity of Rochester, N.Y.

However, the stem and part of the bowl were missing and had to be replaced. When completely restored the pipe presented an impressive appearance, as seen in the illustration (Fig. 15,#1).

Along with it is shown an effigy pipe with a reclining human figure and an artfully decorated pipe stem (Fig. 15,#2). This pipe is reported to have come from the vicinity of Rochester, New York, and when received, required some restoring to show it in its present condition. It was brought in for restoration several years ago, and this illustration of it was included with an article about ceramic pipes in *Society Bulletin*, Vol.22, #1. While no mention as to its site source was made at the time, it is now believed that it too is an Otstungo pipe, made by the skillful Iroquois artisans at that Mohawk Valley site.

Searching for previous information leading to a descriptive reference dealing with these Iroquois effigy pipes, our attention was called to an illustrated account in the *20th Annual Report, Bureau of American Ethnology, of 1898*. While in no part of this short account is the specific source mentioned of the effigy pipes it displays, it is without doubt the Otstungo site. For a large portion of the accompanying illustrated pipes have now been identified as having been recently seen in the collection at this site. For this reason, three of these verified pipe specimens have been illustrated, courtesy of the Bureau of American Ethnology (Fig. 16). All three depict effigy modeling previously referred to, as seen at Otstungo: wolf's head, serpent, and bird with wide open beak.

In admiring this superior ceramic handiwork the question that probably arises in the minds of most is: Who were the makers? Obviously, they would have had to be ceramic artisans, who had become skilled in the molding and firing of clay. But, were they women or were they men, that is the question. In the account written in 1898 for the Bureau of American Ethnology the author states: "In all probability clay pipes were the work of men, as were the pipes of stone, while vessel making was the work of women."

Taken at its face value here is a statement that seems to this writer questionable, although he readily agrees that men probably made the pipes of stone, since they would have acquired the necessary stone-working skill in the stone bowl quarries. However, when it comes to the making of clay pipes requiring intricate knowledge of a different kind, common sense would seem to refute the statement that men were their makers. It appears likely that the Bureau's author in presenting this idea gave little thought to the complexities involved in performing this ceramic work, to say nothing of what effect such competition would have had upon the women potters, also engaged in ceramic work but confined, as is envisioned, to the making of pots. On the contrary, it has always seemed sensible to the writer to accredit women not only as potters but also as the makers of ceramic pipes. For, from the introduction of ceramics they most certainly would have been the potters, and subsequently probably the makers of clay pipes, to have acquired the skill that enabled them to produce their superior Stage 4 pots of protohistoric times — early commentators have

reported that women were the potters — as well as such superior work as shown by Otstungo effigy pipes. However, actual proof of a woman-oriented pipe-making industry has seemed elusive until a review was made of a 1909 account by M.R. Harrington, derived from the *New York State Museum Bulletin #133, Fifth Report of the Director, 1908*. Harrington's report, entitled *The Last of the Iroquois Potters* goes a long way toward presenting indisputable evidence concerning the numerous primitive pieces of equipment and processing stages required to produce ceramic ware. In the course of Harrington's anthropological work in collecting ethnological specimens during an extended stay at the Cherokee settlements in western North Carolina, he had an opportunity to study pottery-making. And, as it was known that the Eastern Cherokee were of the same linguistic stock as the Iroquois, and resembled them in culture to a certain extent, he felt that whatever knowledge he acquired would have Iroquoian bearings.

Harrington says in part: "When baking a batch of pottery the old Cherokees — [women are indicated] — were accustomed to put in a lot of little toy vessels . . . Crude clay pipes were also made . . . as toys . . . Such toy vessels, figurines and pipes are not infrequently unearthed from ancient Iroquois sites in New York."

Whether such pipe-making might have included, when desired, functional well-shaped Elbow pipes is not made clear, but might be inferred. However, the process of pottery-making that is described by Harrington is impressive evidence of the amount of knowledge and patient care required to shape and fire a ceramic pot — and hence, presumably ceramic pipes.

An old Cherokee woman potter, Iwi Katalsta, one of several was selected as the one to show her methods of pottery-making. Without examining in detail each operation as the work proceeded, a quick enumeration of tools and equipment with mention of the operations involved should provide an impressive reminder of the exacting nature of the work. The several pieces of equipment were: a Hammerstone for pounding the clay; a sharpened stick for making lines and notches; a water-worn pebble for smoothing; a carved wooden paddle for stamping the pottery; the blunt head of a common ax — a long stone in old times — used as a clay pulverizer; a bucket of water; and a wooden tray on which to knead the clay.

Processing of the pot moved through several work stages as performed by Iwi Katalsta: clay was first pulverized with the ax and placed on the wooden tray; then moistened and again thoroughly pounded with the

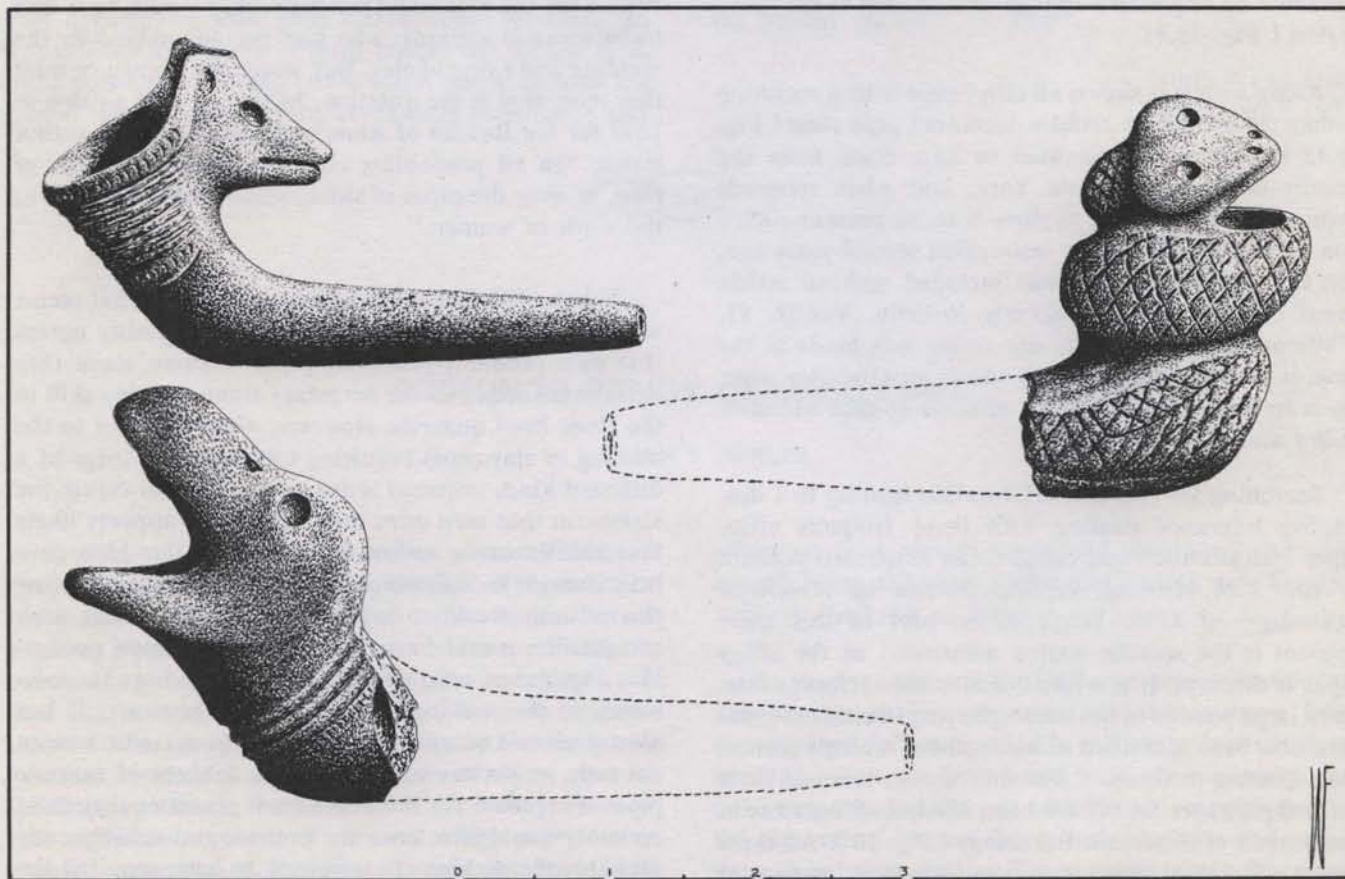


Fig. 16. EFFIGY CERAMIC PIPES, Otstungo Site, Mohawk Valley.

Hammerstone — a nut cracker; the clay was now kneaded with more water added as required; fine sand sometimes was added for temper; next a large handful of clay was patted into a ball, then pressed by thumb manipulation into a small cup as a base for the vessel; this bowl-shaped base was built upon by pinching on around its edges one coil of clay after another, until the required form and height were reached; when it had dried a little the outside of the pot was briskly stamped with the wooden paddle, repeatedly dipped in water; then after drying for one to three days the pot was rubbed smooth with the smoothing pebble, dipped in water from time to time; the pot was then placed beside an open fire until a faint brown color spread over the entire vessel; next it was placed mouth down in the coals of the fire and covered with about 3" of dry bark, which soon caught fire; after firing thus for about an hour, the bark having burned away, it was tapped sharply with a stick, and if it rang clear, it was perfect; finally a handful of bran — formerly corncobs — was dropped into the pot while still red hot, and so consumed, thus searing the inside with a blackened surface, which helped make it impervious to water. This black charred inside is often found on aboriginal pottery of the Northeast.

What untiring patience is here displayed in the production of a ceramic pot; operations that basically would of necessity have been quite similar in the making of a ceramic pipe. Therefore, it seems inconceivable that such work would have been handled by anyone other than the women. For they had developed the required skill from the coming of ceramics, when they had taken on the making of ceramic pots that replaced man-made stone bowls.

In thinking back over the operations just reviewed in

making a ceramic pot, most of which would doubtless have been required in shaping and firing a clay pipe, assigning such exacting work to men in a male pipe-making enterprise seems unrealistic to say the least. For this would have pitted men's skills against that of women in performing essentially similar work in making ceramic ware, which doubtless would have caused unwholesome social friction.

That which appears more probable, as stone bowl quarry remains seem to indicate, is that men started making stone pipes — probably introduced by Adena migrants — during the final days of stone bowl-making, and continued producing them with numerous modifications throughout Ceramic times, long after the making of stone bowls had ended. And then, as woman's skill increased in the making of ceramic pots, she fashioned clay pipes in elbow shapes, inspired by those of stone. Then she may have added them with figurines and toys to her batch of clay, when making clay pottery, as is suggested by Harrington's remarks.

At the Otstungo site with its untold number of fancifully figured effigy pipes, a highly skilled clay pipe industry is indicated, now believed to have been operated by women. The restored human face-decorated pipe, as illustrated, has fine mineral temper and good proportions, and when considered together with other Otstungo effigy ceramic pipes, displays a high degree of skillful modeling ability. So far as is known, this concentration of Iroquois specialized effigy pipe-making is unique, and is worth noting for comparative purposes, if for no other reason.

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TANGIBLE AND INTANGIBLE EVIDENCE

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As the study of man continues through the science of Anthropology — including its important branch of Archeology — many things about human development have been discovered, which have caused some modification of former concepts. Consequently, it seems apropos at this time to expose certain ideas related to this subject that have occurred to the writer. They are offered not as indisputable truths, but rather as debatable probabilities, which may contain suggestions for a fuller understanding of how human destiny is implicated in man's

evolution from ancient beginnings.

Evidence with which most are all well acquainted has to do with the tangible remains of man that have been preserved over the hundreds of millenniums of human survival. But another equally important study concerns intangible evidence that is not seen, but is implied as a result of constructive reasoning. It deals with human characteristics of a social and spiritual nature derived from a study of man's skeletal remains, from which deductions may be made.

Considering first, human tangible evidence; that which seems most relevant to this discussion is realization of the tremendous antiquity of man. This is proven by his fossilized skeletal remains, as for example those recovered by Dr. Leaky in Olduvai Gorge, Kenya, Africa. Because of their stratification in ancient volcanic deposits, determination of their age has been made possible with amazing results. It is now known that a very primitive creature closely resembling an ape, but with certain distinctly human characteristics lived in Olduvai Gorge between a million and a half to two million years ago. Furthermore, very crude stone tools were recovered at other sites associated with descendants of some of these early individuals amounting to roughly flaked pebbles, with a sharpened edge, or a pick point here or there, used in killing, skinning, and butchering their kills. It is important to note here that such primitives, ape-like as they evidently were, had by means of reason advanced to a state of being beyond that of an ape, for apes, down to this day, have never been able to make tools from pebbles. The most they can do is pick up a stone and hurl it at their enemies, for they lack the faculty of reason, as the term is used to define this human attribute.

Although existence of an ape-like man at the dawn of man's beginning is now widely accepted, anthropologists still are searching for a more remote missing-link, which they hope will prove beyond a possible doubt that some form of ape gave birth to the first human. All of this is of much interest to archeologists, who, through a study of stone and bone man-made tools, concern themselves in evaluating development of human beings in later ages from the early Paleolithic down to historic times. But few give little thought or time to evaluating man's fossilized remains as related to his spiritual and social attributes. Although Sociologists attempt to define man's climb through different social developments, they seem to lose sight of the part that anthropology plays in the study of human advance. And they omit almost completely any reference to, or acceptance of the existence of a spiritual element. They merely portray human development — quite accurately — as a prolonged effect of advance extending throughout millenniums of successes and failures, in which man climbs a few steps, falls back part way, and then starts climbing again. But they seem to shy away from attempting to explain man's evolvement from an ape, or from suggesting a reason for his very existence as apart from that of an ape.

While the writer makes no attempt to cover this subject exhaustively — something that more appropriately belongs to theological treatises, which usually omit it due to religious scruples — a few ideas are discussed, which seem to be related to a study of human evolution. As anthropology is basically concerned with this problem, there should be no objection, it would

seem, to an evaluation here of relevant intangible evidence.

With acceptance of the tangible premise, already discussed, involving recovery of fossilized skeletal remains of ape-like man, together with those at several other sites of various more advanced stages, which connect him to *Homo sapiens* in physical structure, two questions might be asked: 1) What caused ape-like man to appear — and 2) What has brought about man's evolvement from such an animal origin? Introduction of these questions, although theological in nature, appear too closely associated with anthropological research to treat them separately. At least this is the writer's feeling in the matter, which has tended to justify discussion of them together, as fundamental elements of human evolution. Treated in this way, conclusions should be reached more realistically, untrammelled by religious dogma.

An attempt to answer the first question appears to be tied up with the unseen, but nevertheless a generally accepted part of a human being, usually referred to as spiritual. Here, it is suggested that it be applied to dawn man, who has just emerged from the status of ape, as established by the premise. This metamorphosis, it seems apparent, was not physical in nature, brought about by some known chemical reaction, since it does not appear in any known species of apes. Apes of today exhibit only their original animal characteristics with no man-like accomplishments brought about by reason. True, it has been shown recently that gorillas in their native African habitat have been seen to use a small stick to help recover ants for food under certain conditions, but this stick tool was not fashioned by them — therefore was not created as a result of reason.

Consequently, ability of the first ape-man to reason cannot be accounted for as a result of any known physical phenomenon. This being the case, the answer to the first question might well be found to lie in the intangible realm, having to do with man's unseen spiritual nature. While any conclusion that may be derived from an evaluation of this kind is always subject to dispute, nevertheless, until scientists prove otherwise a spiritual deduction seems tenable. This leads to a derived belief that the spark of reason was kindled in ape-man by an infinite supernatural being, acknowledgment of whose existence in one form or another has been accepted by primitive peoples at some time during their more advanced stages of cultural development. How much earlier, and to what extent man invisioned this supreme spirit may never be known, but there came a day in the dim ages of human evolution when man's power of reason, in an effort to account for certain phenomena he was unable to explain, began to attribute them to unseen spiritual forces. And in time this led to a concept, in most cases, of a central all-powerful deity. Whether there is a connection between this spiritual being and our hypothetical concept

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of a spiritual infused origin of man cannot be proven, but may be accepted only as a possibility. However, as previously mentioned, the fact remains that man alone of all ape species received and developed the power of reason, which seems to support the argument for man's origin as being of an exceptional kind bordering on the supernatural.

This brings the second question into focus, as to what has happened that enabled an ape with the power of reason to lift himself out of the jungle and into a man-made civilized state of being. Of course, any appraisal of this development must accept the fact that from the beginning man has traveled a long tedious route covering hundreds of millenniums, during which his climb has often been retarded, as he stumbled along the way. He had no idea to what end he was heading; doubtless for the most part, was concerned only with his survival, which often must have seemed frighteningly uncertain. However, as he moved up from one rung to the next, he was forever reaching out for something better than what he had before. And as he moved forward, his brain capacity began to enlarge, altering his facial characteristics ever so slightly. Probably, he was unaware that a change was

taking place, and yet an inward urge — call it what you will — spiritual or soul-inspired, at times of crisis was leading him into new fields of accomplishment. The point is that although he often failed and fell behind, the trend of his course was upward, not downward. And, if this were not so, human beings would still be ape-like animals swinging from tree to tree in the jungle.

It appears obvious that as man bettered himself — although unconsciously — actually he was continually reaching toward the infinite, and in so doing has furnished one good reason for belief in the existence of an infinite God, who is the loadstone of man's advance.

Finally, this leads to a conclusion that finite human beings have not only the privilege but a duty to think and act in ways above those of apes, if they are to maintain a civilized status and prevent retrogression to that of an animal. And the margin of difference between these two poles — except for physical appearance — is relatively so small that it requires but a stumble or two to produce a social reversal.

April 1, 1968